

Tank-Mounted Filter

BFT



Features and Benefits

- Low pressure tank-mounted filter
- Designed for high return line flows
- Dual inlet porting
- Top, side or bottom mounting
- Optional check valve prevents reservoir siphoning
- Special filter element design provides aftermarket benefits
- Also available with DirtCatcher® element (BBD)
- Cast iron head available

300 gpm
1135 L/min
100 psi
7 bar

Model No. of filter in photograph is BFT1BBZ5F.

IRF
 TF1
 KF3
 KL3
 LF1
 MLF1
 RLD
 GRTB
 MTA
 MTB
 ZT
 KFT
 RT
 RTI
 LRT
 ART
BFT
 QT
 KTK
 LTK
 MRT

Flow Rating:	Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	250 psi (17 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	Contact factory, per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 25 psi (1.7 bar) Full Flow: 52 psi (3.6 bar)
Porting Head & Cap:	Aluminum
Element Case:	Steel
Weight of BFT-1BB:	36.7 lbs. (16.6 kg)
Element Change Clearance:	14.75" (375 mm)

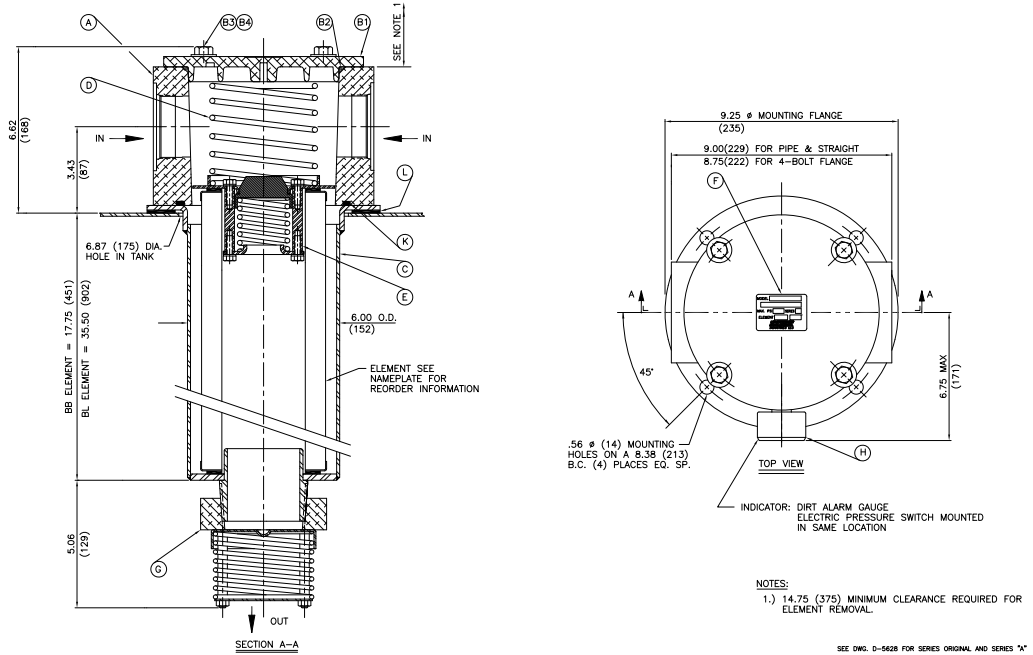
Filter Housing Specifications

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

Fluid Compatibility

Accessories For Tank-Mounted Filters

PAF1
 MAF1
 MF2



Metric dimensions in ().

Element Performance Information & Dirt Holding Capacity

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
BB/BLZ1	<1.0	<1.0	<1.0	<4.0	4.2
BB/BLZ3	<1.0	<1.0	<2.0	<4.0	4.8
BB/BLZ5	2.5	3.0	4.0	4.8	6.3
BB/BLZ10	7.4	8.2	10.0	8.0	10.0
BB/BLZ25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
BBZ1	268	BBDZ1	205	BLZ1	536
BBZ3	275	BBDZ3	163	BLZ3	550
BBZ5	301	BBDZ5	229	BLZ5	550
BBZ10	272	BBDZ10	183	BLZ10	550
BBZ25	246	BBDZ25	186	BLZ25	550

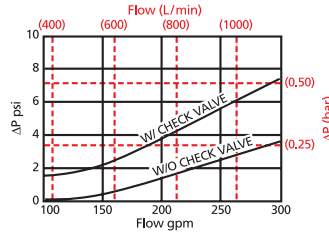
Element Collapse Rating: 150 psid (10 bar)

Flow Direction: Outside In

Element Nominal Dimensions: BB: 5.0" (125 mm) O.D. x 18.0" (460 mm) long
BL: 5.0" (125 mm) O.D. x 36.0" (920 mm) long

$\Delta P_{\text{housing}}$

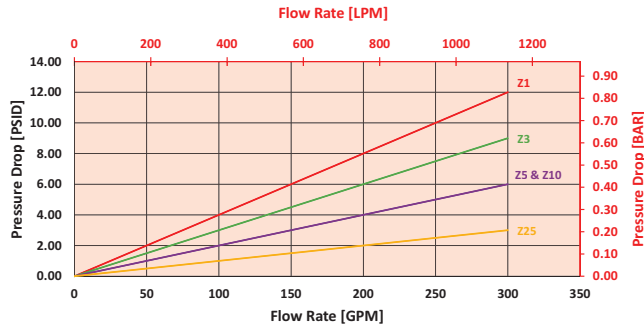
BFT $\Delta P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{\text{element}}$

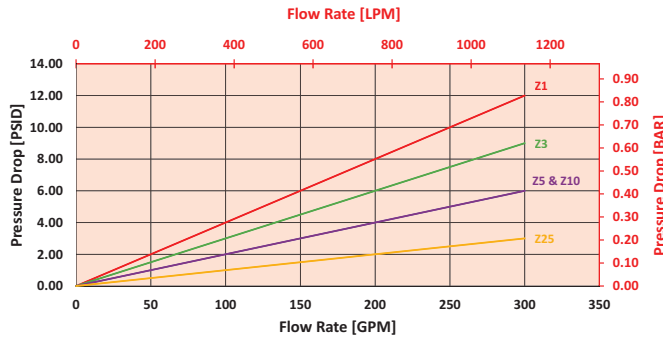
BBZ

Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)



BLZ

Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)



$$\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + (\Delta P_{\text{element}} * V_f)$$

Exercise:

Determine ΔP_{filter} at 200 gpm (758 L/min) for BFT1BBZ10PY2 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 200 gpm. In this case, $\Delta P_{\text{housing}}$ is 1.5 psi (.10 bar) on the graph for the BFT housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 200 gpm. In this case, $\Delta P_{\text{element}}$ is 6 psi (.41 bar) according to the graph for the BBZ10 element.

Because the viscosity in this sample is 160 SUS (34 cSt), we determine the **Viscosity Factor (V_f)** by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, ΔP_{filter} , is calculated by adding $\Delta P_{\text{housing}}$ with the true element pressure differential, ($\Delta P_{\text{element}} * V_f$). The $\Delta P_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$\Delta P_{\text{housing}} = 1.5 \text{ psi } [.10 \text{ bar}] \mid \Delta P_{\text{element}} = 6 \text{ psi } [.41 \text{ bar}]$

$V_f = 160 \text{ SUS } (34 \text{ cSt}) / 150 \text{ SUS } (32 \text{ cSt}) = 1.1$

$\Delta P_{\text{filter}} = 1.5 \text{ psi} + (6 \text{ psi} * 1.1) = 8.1 \text{ psi}$

OR

$\Delta P_{\text{filter}} = .10 \text{ bar} + (.41 \text{ bar} * 1.1) = .55 \text{ bar}$

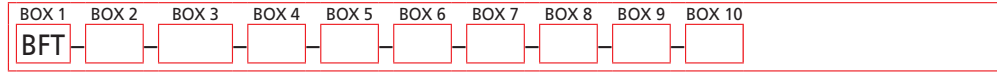
Pressure Drop Information Based on Flow Rate and Viscosity

Note:
If your element is not graphed, use the following equation:
 $\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$ Plug this variable into the overall pressure drop equation.

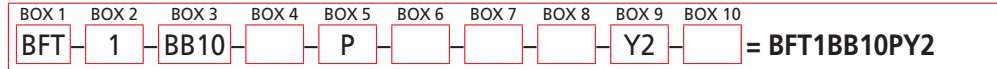
Ele.	ΔP	Ele.	ΔP
BB10	0.03	BL10	0.01
BB25	0.01	BL25	0.01
BBDZ1	0.08	BLDZ1	0.16
BBDZ3	0.06	BLDZ3	0.12
BBDZ5	0.05	BLDZ5	0.10
BBDZ10	0.04	BLDZ10	0.08
BBDZ25	0.02	BLDZ25	0.04

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder KF3:



Example: NOTE: Only box 10 may contain more than one option



BOX 1	BOX 2	BOX 3			BOX 4
Filter Series	Number of Elements	Element Size and Media			Seal Material
BFT	1	BB Length	BL Length		Omit = Buna N H = EPR = Anodized W Aluminum Parts H.5 = Skydrol® compatibility
		BB3		= 3 μ E media (cellulose)	
		BB10		= 10 μ E media (cellulose)	
		BB25		= 25 μ E media (cellulose)	
		BBZ1	BLZ1	= 1 μ Excellement® Z-Media® (synthetic)	
		BBZ3	BLZ3	= 3 μ Excellement® Z-Media® (synthetic)	
		BBZ5	BLZ5	= 5 μ Excellement® Z-Media® (synthetic)	
		BBZ10	BLZ10	= 10 μ Excellement® Z-Media® (synthetic)	
		BBZ25	BLZ25	= 25 μ Excellement® Z-Media® (synthetic)	
		BBDZ1		= BB size DirtCatcher® 1 μ Excellement® Z-Media®	
		BBDZ3		= BB size DirtCatcher® 3 μ Excellement® Z-Media®	
		BBDZ5		= BB size DirtCatcher® 5 μ Excellement® Z-Media®	
		BBDZ10		= BB size DirtCatcher® 10 μ Excellement® Z-Media®	
		BBDZ25		= BB size DirtCatcher® 25 μ Excellement® Z-Media®	

BOX 5
Porting
P = 2½" NPTF
PP = Dual 2½" NPTF
S = SAE-32
SS = Dual SAE-32
F = 2½" SAE 4-bolt flange Code 61
FF = Dual 2½" SAE 4-bolt flange Code 61

BOX 6
Bypass Setting
Omit = 25 psi cracking
40 = 40 psi cracking

BOX 7
Outlet Porting
Omit = 3" NPT male
T = 13" Tube extension

BOX 8
Optional Check Valve
Omit = None
C = Check valve

BOX 9	
Dirt Alarm® Options	
Omit = None	
Visual	Y2 = Back-mounted tri-color gauge Y2R = Back-mounted gauge mounted on opposite side of standard location
Electrical	ES = Electric switch ESR = Electric switch mounted on opposite side of standard location ES1 = Heavy-duty electric switch with conduit connector ES1R = Heavy-duty electric switch with conduit connector mounted on opposite side of standard location

BOX 10
Additional Options
Omit = None
G547 = Two ½" gauge ports
G1476 = Three-terminal electric switch
M = Metric thread for SAE 4-bolt flange mounting holes (specify after each port designation)
40 = 40 psi bypass setting

NOTES:

Box 3. Replacement element part numbers are identical to contents of Boxes 3 and 4. E media elements are only available with Buna N seals.

Box 4. For options H, W, and H.5 all aluminum parts are anodized. H.5 seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior. Skydrol® is a registered trademark of Solutia Inc.

Box 8. See also "Accessories for Tank-Mounted Filters," page 307.