MiniMiser™ Tank-Mounted Filter

MTB

Model No. of filter in photograph is MTB5TBZ5P16H.

Features and Benefits

- Low pressure tank-mounted filter
- Compact size minimizes space requirements
- Minimizer is cost-effective alternative to spin-on filters
- Special filter element design provides aftermarket benefits

35 gpm
135 L/min
100 psi
7 bar

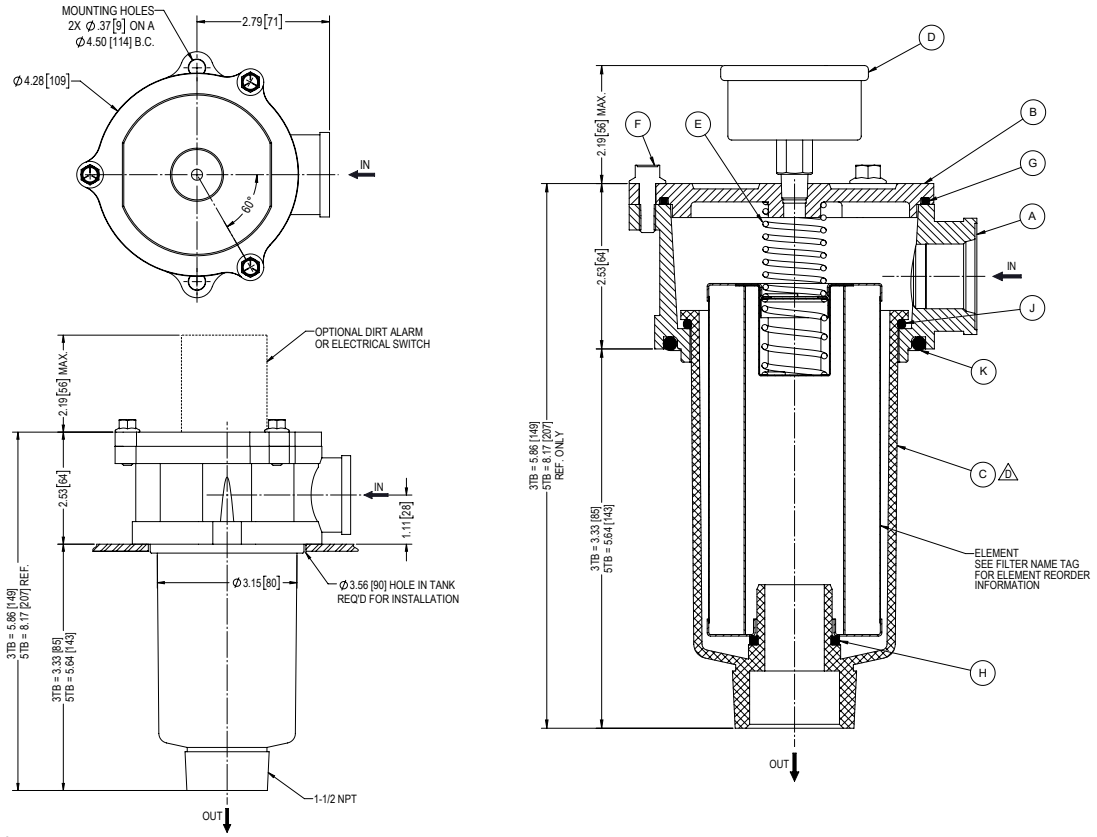
Filter Housing Specifications

Flow Rating:	Up to 25 gpm (95 L/min) for 150 SUS (32 cSt) fluids–MTB-3 Up to 35 gpm (135 L/min) for 150 SUS (32 cSt) fluids–MTB-5
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	229 psi (15 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	Contact factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 25 psi (2 bar) Full Flow: 51 psi (3.5 bar)
Porting Head & Cap: Element Case:	Die Cast Aluminum Glass Filled Nylon
Weight of MTB-3: Weight of MTB-5:	1.8 lbs. (0.8 kg) 2.1 lbs. (1.0 kg)
Element Change Clearance:	3.0" (76 mm) MTB-3 5.0" (127 mm) MTB-5

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose) and Z-Media® (synthetic)

MTB MiniMiser™ Tank-Mounted Filter



Metric dimensions in ( ).

Element Performance Information & Dirt Holding Capacity

	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	
Element	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
3TBZ3	<1.0	<1.0	<2.0	<4.0	4.8
3TBZ5	2.5	3.0	4.0	4.8	6.3
3TBZ10	7.4	8.2	10.0	8.0	10.0
3TBZ25	18.0	20.0	22.5	19.0	24.0
5TBZ3	<1.0	<1.0	<2.0	4.7	5.8
5TBZ5	2.5	3.0	4.0	5.6	7.2
5TBZ10	7.4	8.2	10.0	8.0	9.8
5TBZ25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)
3TBZ3	11
3TBZ5	12
3TBZ10	11
3TBZ25	11
5TBZ3	18
5TBZ5	21
5TBZ10	17
5TBZ25	18

Element Collapse Rating: 150 psid (10 bar)

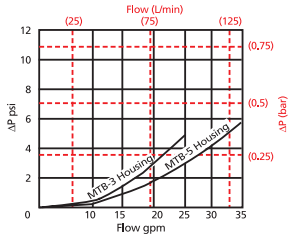
Flow Direction: Outside In

Element Nominal Dimensions: 3TB: 3.0" (76 mm) O.D. x 3.0" (76 mm) long
5TB: 3.0" (76 mm) O.D. x 5.0" (127 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

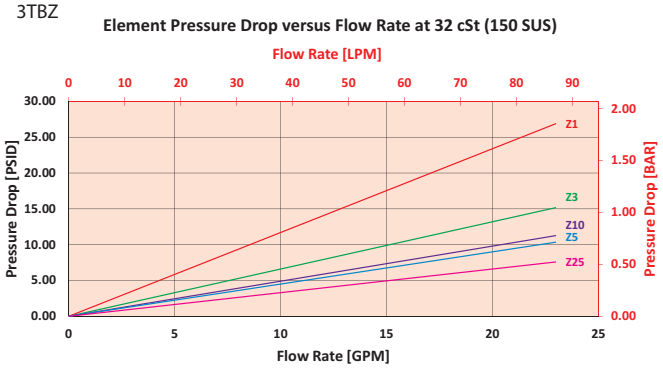
$\Delta P_{housing}$

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

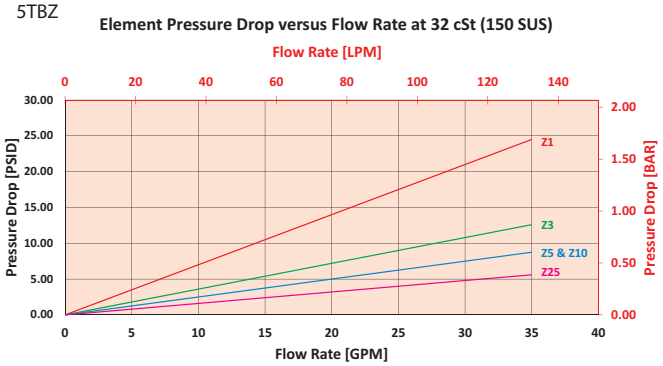


$\Delta P_{element}$

3TBZ



5TBZ



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

Exercise:

Determine ΔP_{filter} at 10 gpm (37.9 L/min) for MTB3TBZ25P12Y5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 10 gpm. In this case, $\Delta P_{housing}$ is 1 psi (.07 bar) on the graph for the MTB housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 10 gpm. In this case, $\Delta P_{element}$ is 3 psi (.21 bar) according to the graph for the 3TBZ25 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). The $\Delta P_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$\Delta P_{housing}$ = 1 psi [.07 bar] | $\Delta P_{element}$ = 3 psi [.21 bar]

V_f = 160 SUS (34 cSt) / 150 SUS (32 cSt) = 1.1

ΔP_{filter} = 1 psi + (3 psi * 1.1) = 4.3 psi

OR

ΔP_{filter} = .07 bar + (.21 bar * 1.1) = .30 bar

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

Ele.	ΔP	Ele.	ΔP
3TB10	1.40	5TB10	0.40
3TB25	0.10	5TB25	0.08

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Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6
MTB –	–	–	–	–	–

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	
MTB –	3 –	TB25 –	P12 –	H –	Y5	= MTB3TB25P12HY5

BOX 1

Filter Series
MTB

BOX 2

Element Length (in)
3
5

BOX 3

Element Size and Media
TB10 = T size 10 µ E media (cellulose)
TB25 = T size 25 µ E media (cellulose)
TBZ3 = T size 3 µ Excellement® Z-Media® (synthetic)
TBZ5 = T size 5 µ Excellement® Z-Media® (synthetic)
TBZ10 = T size 10 µ Excellement® Z-Media® (synthetic)
TBZ25 = T size 25 µ Excellement® Z-Media® (synthetic)

BOX 4

Porting Options
P12 = ¾" NPTF
P16 = 1" NPTF
S12 = SAE-12
S16 = SAE-16
B12 = ISO 228 G-¾"
B16 = ISO 228 G-1"

BOX 5

Outlet Options
Omit = 1.5" NPT Outlet
H = Hose Barb Outlet
D = Diffuser

BOX 6

Dirt Alarm® Options	
Omit = None	
Visual	Y2C = Bottom-mounted gauge in cap Y5 = Back-mounted gauge in cap
Electrical	ESC = Electric pressure switch (2 terminals)