Air Fusion Technology AFT

Model No. of filter in photograph is AFT8LKZ10L16N

Features and Benefits

- Patent Pending In-tank filter design
- Lightweight and as part of a tank optimization package can reduce reservoir size
- Lock & Key Quality Protected, OEM Specific Interfaces available
- Superior de-aeration performance
- 360 degree swivel connection. Lines stay connected during element changeouts
- Anti-Drain Check valve option to keep lines from emptying during element change outs
- 135 ft-lb max loading torque on inlet port

Part of Schroeder Industries' Energy Sustainability Initiative

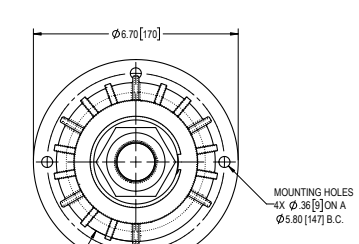
40 *gpm*
151 L/min
100 psi
7 bar

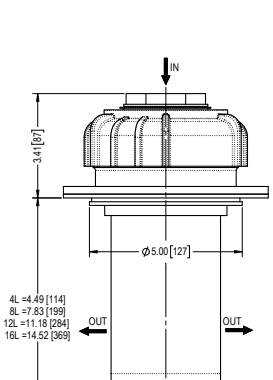
Filter Housing Specifications

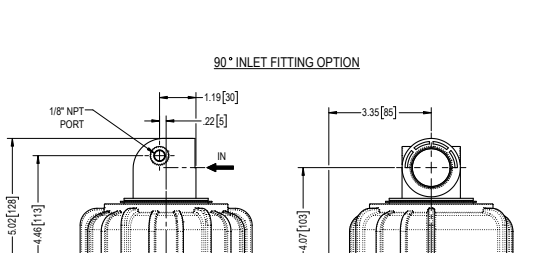
Flow Rating:	40 gpm (151 L/min)
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	350 psi (24 bar)
Rated Fatigue Pressure:	100 psi (7 bar)
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2 bar) Full Flow: 45 psi (3 bar)
Element Change Clearance:	4L = 5.28" [134mm] 8L = 8.62" [219mm] 12L = 11.96" [304mm] 16L = 15.30" [389mm]
Element Case:	12 elements

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose), Z-Media® and ASP® media (synthetic)
High Water Content	All Z-Media® and ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and all ASP® media (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation and all ASP® media (synthetic)







Metric dimensions in (mm).

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 wrt ISO 16889 Using APC calibrated per ISO 11171	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$
4LKZ3, 8LKZ3 12LKZ3, 16LKZ3	<1.0	<1.0	<2.0	<4.0	4.8
4LKZ5, 8LKZ5 12LKZ5, 16LKZ5	2.5	3.0	4.0	4.8	6.3
4LKZ10, 8LKZ10 12LKZ10, 16LKZ10	7.4	8.2	4.0	8.0	10.0
4LKZ25, 8LKZ25 12LKZ25, 16LKZ25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
4LKZ3	8	8LKZ3	16	12LKZ3	23	16LKZ3	30
4LKZ5	9	8LKZ5	18	12LKZ5	26	16LKZ5	33
4LKZ10	11	8LKZ10	22	12LKZ10	32	16LKZ10	41
4LKZ25	18	8LKZ25	36	12LKZ25	52	16LKZ25	69

Element Burst Pressure: 86 psi (6 bar)

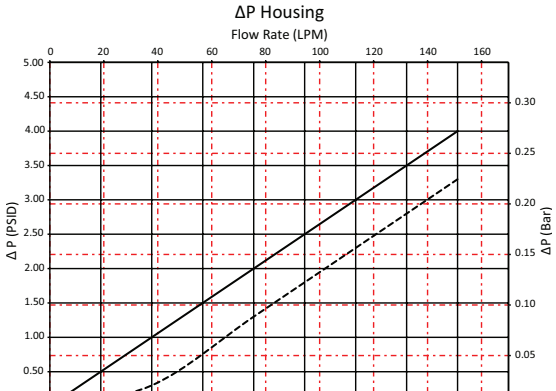
Flow Direction: Inside Out

Element Nominal Dimensions:
4LKZ: 3.71" (94.23 mm) O.D. x 4.49" (114.05 mm) long
8LKZ: 3.71" (94.23 mm) O.D. x 7.84" (199.14 mm) long
12LKZ: 3.71" (94.23 mm) O.D. x 11.18" (283.97 mm) long
16LKZ: 3.71" (94.23 mm) O.D. x 14.52" (368.81 mm) long

Pressure Drop Information Based on Flow Rate and Viscosity

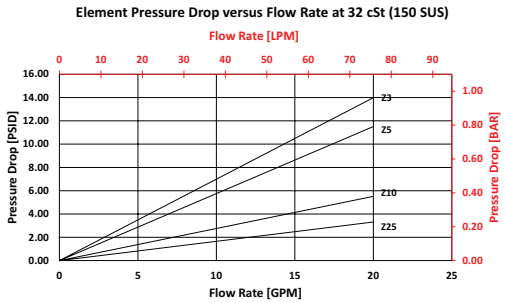
$\Delta P_{housing}$

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

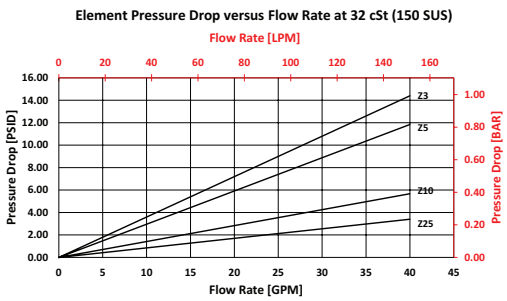


$\Delta P_{element}$

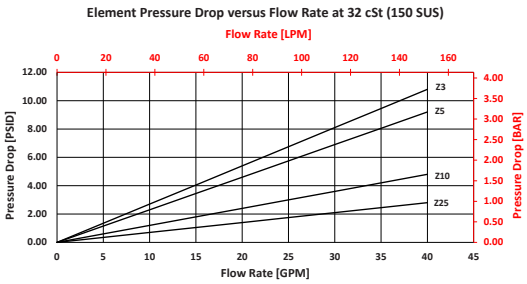
4LKZ



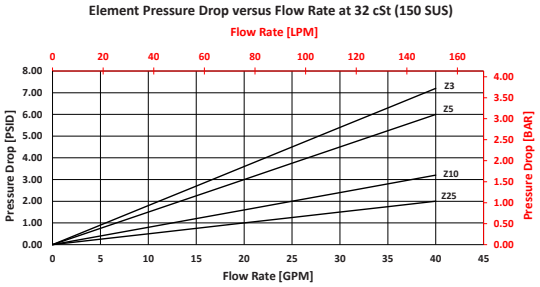
8LKZ



12LKZ



16LKZ



Note: Additional Pressured Drop information available upon request

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

Exercise:

Determine ΔP_{filter} at 10 gpm (37.9 L/min) for AFT8LKZ10L16Y2 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 1.5 psi (.10 bar) on the graph for the AFT housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 10 gpm. In this case, $\Delta P_{element}$ is 1.4 psi (.10 bar) according to the graph for the 8LKZ10 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:

$\Delta P_{housing}$ = 1.5 psi [.10 bar] | $\Delta P_{element}$ = 1.4 psi [.10 bar]

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

ΔP_{filter} = 1.5 psi + (1.4 psi * 1.1) = 3.0 psi

OR

ΔP_{filter} = .10 bar + (.10 bar * 1.1) = .21 bar

AFT Air Fusion Technology

Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
AFT							=

Example: *NOTE: One option per box*

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
AFT	8LK	Z10	V	L16		Y2	= AFT8LKZ10VL16Y2

BOX 1

Filter Series	
AFT	Air Fusion Technology Filter

BOX 2

Element
4LK = 4″ Element
8LK = 8″ Element
12LK = 12" Element
16LK = 16" Element

BOX 3

Media
Z3 = 3 micron Z media
Z5 = 5 micron Z media
Z10 = 10 micron Z media
Z25 = 25 micron Z media

BOX 4

Seal
Omit = Buna
V = Viton
H = EPR

BOX 5

Porting
S12 = SAE 12
S16 = SAE 16
L12 = 90 Deg SAE 12
L16 = 90 Deg SAE 16
HB16 = 1″ Hose Barb

BOX 6

Bypass
25 = 25 psi
Omit = 30 psi
40 = 40 psi

BOX 7

Check Valve
Omit = Check Valve
N = No Check Valve

BOX 8

Gauge Port Option (Elbow Only)
N = Plugged
Y2 = Tricolor visual indicator (Back Mounted)
Y2C = Tricolor visual indicator (Bottom Mounted)
ES = Electric Switch
ES1 = Heavy Duty Electric Switch
ES2 = Electrical Switch with Deutsch Connector

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Example: 8LKZ25V

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers. All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only.

Box 7. Check valve prevents hydraulic oil to spill when changing out the element and it is recommended. Not including could reduce differential pressure slightly but risks a greater hydraulic oil spill on element change out.