

Base-Ported Pressure Filter

KF30/KF50



Features and Benefits

- Base-ported pressure filter
- Can be installed in vertical or horizontal position
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Offered in conventional subplate porting
- Same day shipment model available
- Double and triple stacking of K-size elements can be replaced by single KK or 27K-size elements
- Available with quality-protected GeoSeal® Elements (GKF30/GKF50)

100/150 gpm ^{NF30}
380/570 L/min ^{NFS30}

KF30- 3000 psi ^{YF30}
210 bar ^{CFX30}

KF50- 5000 psi ^{PLD}
345 bar ^{CF40}

^{DF40}
^{PF40}
^{RFS50}
^{RF60}
^{CF60}
^{CTF60}
^{VF60}
^{LW60}

Model No. of filter in photograph is KF30/KF501K10SD.

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids With 2" porting only, up to 150 gpm (570 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	KF30- 3000 psi (210 bar) KF50- 5000 psi (345 bar)
Min. Yield Pressure:	KF30- 12,000 psi (830 bar), per NFPA T2.6.1 KF50- 15,000 psi (1025 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	KF30- 2500 psi (170 bar), per NFPA T2.6.1-2005 KF50- 3500 psi (240 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 61 psi (4.2 bar) Non-bypassing model has a blocked bypass.
Porting Base & Cap:	Ductile Iron
Element Case:	Steel
Weight of KF30-1K:	48 lbs. (22 kg)
Weight of KF30-2K:	65 lbs. (30 kg)
Weight of KF30-3K:	81 lbs. (37 kg)
Weight of KF50-1K:	59.7 lbs. (27.1 kg)
Weight of KF50-2K:	80.7 lbs. (36.6 kg)
Weight of KF50-3K:	102.0 lbs. (46.3 kg)
Element Change Clearance:	8.50" (215 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

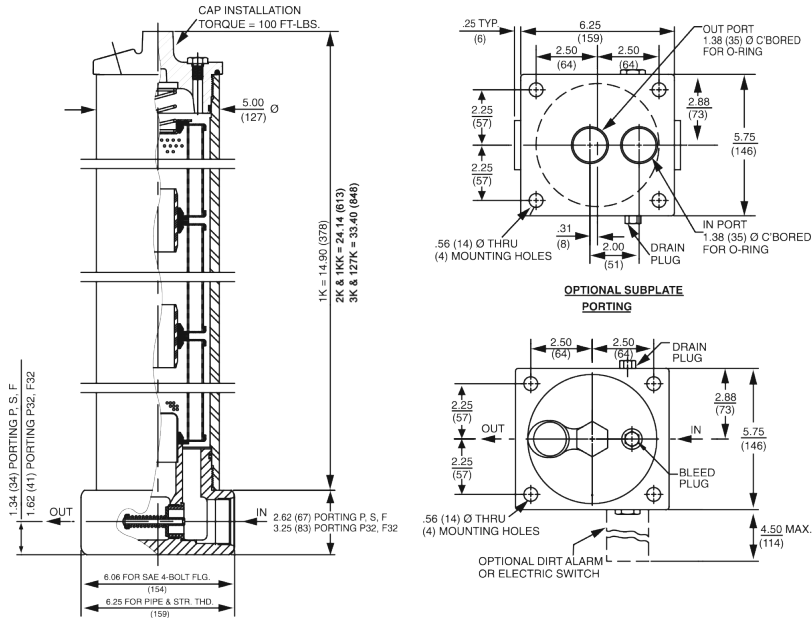
Filter Housing Specifications

KF30
KF50
^{TF50}
^{KC50}
^{MKF50}
^{MKC50}
^{KC65}
^{HS60}
^{MHS60}
^{KFH50}
^{LC60}
^{LC35}
^{LC50}

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® (synthetic), 10 µ ASP® Media
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP® Media
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP® 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

^{NOF50-760}
^{FOF60-03}
^{NMF30}
^{RMF60}
^{14-CRZX10}
^{20-CRZX10}



Metric dimensions in ().
 Dimensions shown are inches (millimeters) for general information and overall envelope size only.
 For complete dimensions please contact Schroeder Industries to request a certified print.

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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5
KZX3/KKZX3/27KZX3	<1.0	<1.0	<2.0	4.7	5.8
KZX10/KKZX10/27KZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	27KZ1	336	KZW1	61		
KZ3	115	KKZ3	230	27KZ3	345	KZW3	64	KKZW3	128
KZ5	119	KKZ5	238	27KZ5	357	KZW5	63	KKZW5	126
KZ10	108	KKZ10	216	27KZ10	324	KZW10	57	KKZW10	114
KZ25	93	KKZ25	186	27KZ25	279	KZW25	79	KKZW25	158
KZX3	81*	KKZX3	163*	27KZX3	249*				
KZX10	90*	KKZX10	182*	27KZX10	279*				

* Based on 100 psi terminal pressure

Element Collapse Rating: 150 psid (10 bar) for standard elements
 3000 psid (210 bar) for high collapse (ZX) versions

Flow Direction: Outside In

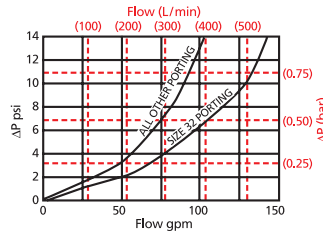
Element Nominal Dimensions: K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
 KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
 27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Base-Ported Pressure Filter

KF30/KF50

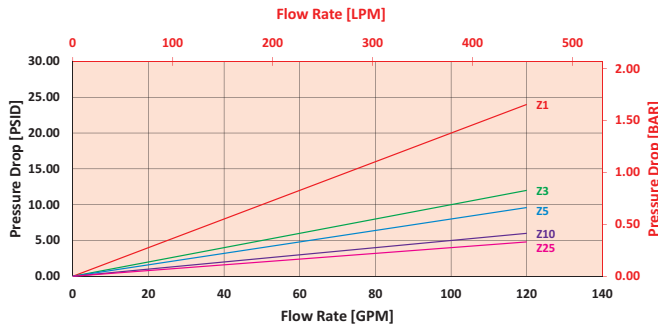
$\Delta P_{\text{housing}}$

KF30/KF50 $\Delta P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:

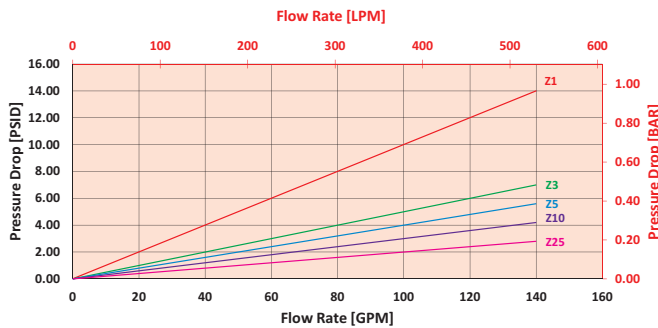


$\Delta P_{\text{element}}$

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



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



$$\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + (\Delta P_{\text{element}} * \mathbf{V}_f)$$

Exercise:

Determine ΔP_{filter} at 50 gpm (189.5 L/min) for KF301KZ10SD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 50 gpm. In this case, $\Delta P_{\text{housing}}$ is 3 psi (.21 bar) on the graph for the KF30 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 50 gpm. In this case, $\Delta P_{\text{element}}$ is 2.5 psi (.17 bar) according to the graph for the KZ10 element.

Because the viscosity in this sample is 160 SUS (34 cSt), we determine the **Viscosity Factor (\mathbf{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, $(\Delta P_{\text{element}} * \mathbf{V}_f)$. 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:

$$\Delta P_{\text{housing}} = 3 \text{ psi } [.21 \text{ bar}] \quad | \quad \Delta P_{\text{element}} = 2.5 \text{ psi } [.17 \text{ bar}]$$

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

$$\Delta P_{\text{filter}} = 3 \text{ psi } + (2.5 \text{ psi } * 1.1) = 5.8 \text{ psi}$$

OR

$$\Delta P_{\text{filter}} = .21 \text{ bar } + (.17 \text{ bar } * 1.1) = .40 \text{ bar}$$

Pressure Drop Information Based on Flow Rate and Viscosity

Note:

If your element is not graphed, use the following equation:

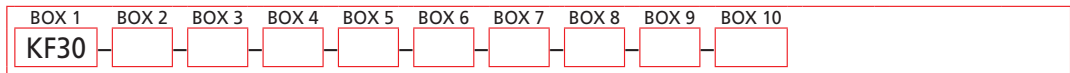
$\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$ Plug this variable into the overall pressure drop equation.

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
K3	0.25	2K3/ KK3	0.12	3KZ1/ 27KZ1	0.05
K10	0.09	2K10/ KK10	0.05	3KZ3/ 27KZ3	0.03
K25	0.02	2K25/ KK25	0.01	3KZ5/ 27KZ5	0.02
KAS3	0.10	2KAS3/ KAS3	0.05	3KZ10/ 27KZ10	0.02
KAS5	0.08	2KAS5/ KAS5	0.04	3KZ25/ 27KZ25	0.01
KAS10	0.05	2KAS10/ KAS10	0.03	3K3	0.08
KZX10	0.22	2KZX10/ KKZX10	0.11	3K10	0.03
KZW1	0.43	2KZW1	-	3K25	0.01
KZW3	0.32	2KZW3/ KKZW3	0.16	3KAS3/ 27KAS3	0.03
KZW5	0.28	2KZW5/ KKZW5	0.14	3KAS5/ 27KAS5	0.02
KZW10	0.23	2KZW10/ KKZW10	0.12	3KAS10/ 27KAS10	0.02
KZW25	0.14	2KZW25/ KKZW25	0.07	3KAS25/ 27KAS25	0.07

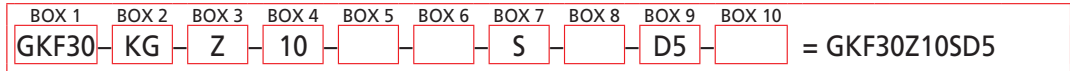
Filter Model Number Selection

Highlighted product eligible for **QuickDelivery**

How to Build a Valid Model Number for a Schroeder KF30:



Example: NOTE: Only boxes 8 and 10 may contain more than one option



Filter Series	Number & Size of Elements	Media Type
KF30 KFN30 (Non-bypassing: requires ZX high collapse elements)	1 = K, KK, 27K 2 = K 3 = K GeoSeal® Options 1 = KG, KKG, 27KKG	Omit = E Media (Cellulose) AS = Anti-Stat Media (synthetic) Z = Excellement® Z-Media® (synthetic) ZW = Aqua-Excellement® ZW Media ZX = Excellement® Z-Media® (High Collapse centertube) W = W Media (water removal) M = Media (reusable metal mesh) N size only
GKF30 (GeoSeal®)	2 = KG 3 = KG	
KF50 KFN50 (Non-bypassing: requires ZX high collapse elements)		
GKF50 (GeoSeal®)		

NOTES:

Box 2. Number of elements must equal 1 when using KK or 27K elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. ZW media not available in 27K length. For standard elements, a plastic connector SAP P/N: 7630900(LF-1997) is used to connect two or three K elements. For high collapse, a steel connector is required SAP P/N: 7608360 (LF-3255C).

Box 5. H.5 seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior. Viton® is a registered trademark of DuPont Dow Elastomers. Skydrol® is a registered trademark of Solutia Inc.

Box 7. For options F & F32, bolt depth .75" (19 mm).
For option O, O-rings included; hardware not included.

Box 8. X and 50 options are not available with KFN30 or KFN50.

Box 9. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.

Box 10. Options N, are not available with KFN30, KFN50. N option should be used in conjunction with dirt alarm.

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
Filter Series	Number & Size of Elements	Media Type	Micron Rating	Seal Material	Magnet Option	Porting	Micron Rating	Seal Material	Magnet Option
Options	GeoSeal® Options								
Dirt Alarm® Options									
Additional Options									