

Tank-Mounted Filter

KFT



Features and Benefits

- Low pressure tank-mounted filter
- Meets HF4 automotive standard
- Multiple inlet/outlet porting options
- Top, side or bottom mounting
- Optional check valve prevents reservoir siphoning
- Can also be used in return line application (contact factory)
- Double stacking of K-size element can be replaced by single KK element
- Allows consolidation of inventoried replacement elements by using K-size elements
- Also available with DirtCatcher® elements (KD and KKD)

100 gpm
380 L/min
100 psi
7 bar

Model No. of filter in photograph is KFT1K10P24P24NB

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 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	400 psi (28 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 (1.7 bar) Full Flow: 48 psi (3.3 bar)
Porting Head:	Steel
Porting Cap:	Die Cast Aluminum (standard); Steel (optional)
Element Case:	Steel
Weight of KFT-1K:	10.0 lbs. (4.5 kg)
Weight of KFT-2K:	13.6 lbs. (6.2 kg)
Element Change Clearance:	8.0" (205 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

Filter Housing Specifications

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 (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic), 3, 5 and 10 µ ASP® media (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation, ASP® media (synthetic) and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation, ASP® media (synthetic) (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

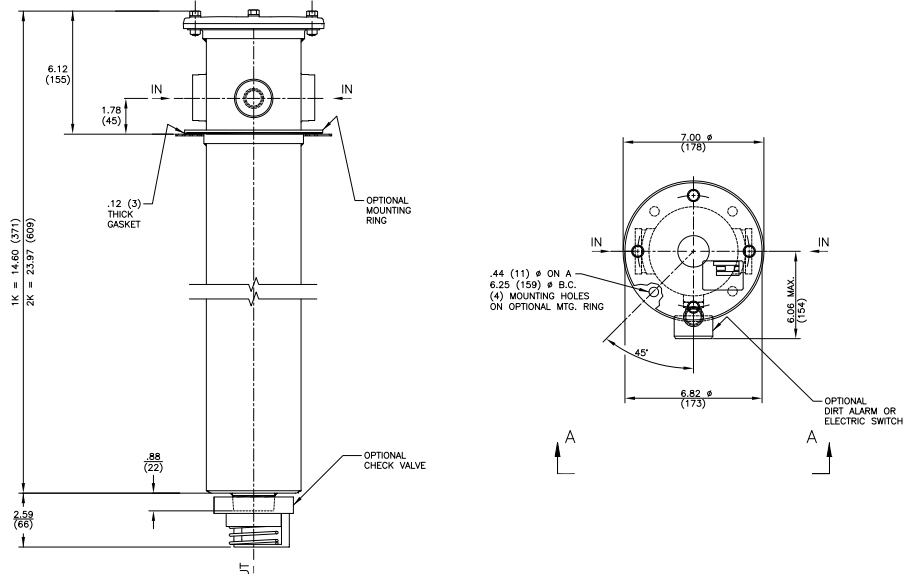
Fluid Compatibility

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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
KZ1/KKZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/KAS3/KKAS3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/KAS5/KKAS5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/KAS10/KKAS10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	KDZ1	89	KKDZ1	188
KZ3/KAS3	115	KKZ3/KKAS3	230	KDZ3	71	KKDZ3	150
KZ5/KAS5	119	KKZ5/KKAS5	238	KDZ5	100	KKDZ5	210
KZ10/KAS10	108	KKZ10/KKAS10	216	KDZ10	80	KKDZ10	168
KZ25	93	KKZ25	186	KDZ25	81	KKDZ25	171

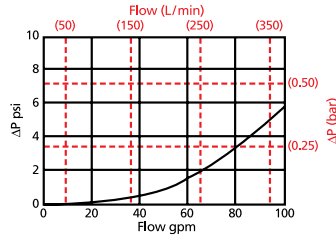
Element Collapse Rating: 150 psid (10 bar) for standard elements

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

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

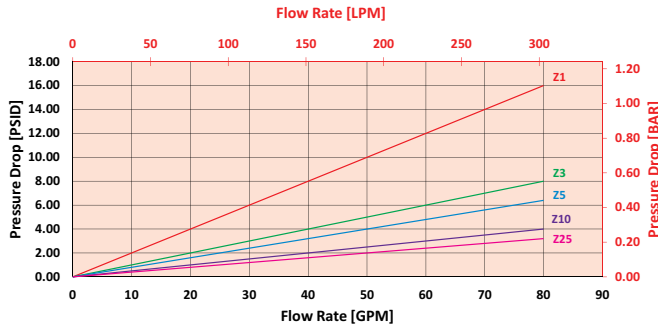
KFT $\Delta P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



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

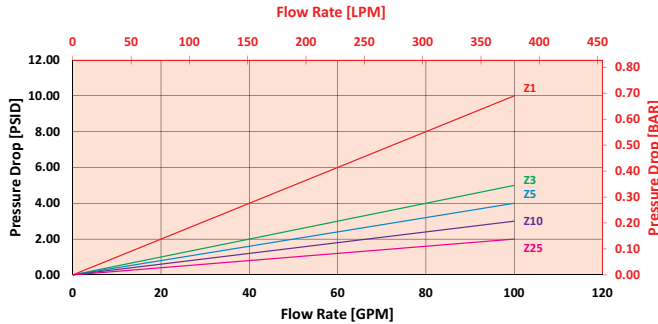
KZ

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



KKZ/2KZ

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 80 gpm (303.2 L/min) for KFT1KZ10S24S24NY2G820 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 80 gpm. In this case, $\Delta P_{\text{housing}}$ is 3.5 psi (.24 bar) on the graph for the KFT housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 80 gpm. In this case, $\Delta P_{\text{element}}$ is 4 psi (.27 bar) according to the graph for the KZ10 element.

Because the viscosity in this sample is 200 SUS (24 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:

$$\Delta P_{\text{housing}} = 3.5 \text{ psi } [.24 \text{ bar}] \quad | \quad \Delta P_{\text{element}} = 4 \text{ psi } [.27 \text{ bar}]$$

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

$$\Delta P_{\text{filter}} = 3.5 \text{ psi} + (4 \text{ psi} * 1.1) = 7.9 \text{ psi}$$

OR

$$\Delta P_{\text{filter}} = .24 \text{ bar} + (.27 \text{ bar} * 1.1) = .54 \text{ bar}$$

Pressure Drop Information Based on Flow Rate and Viscosity

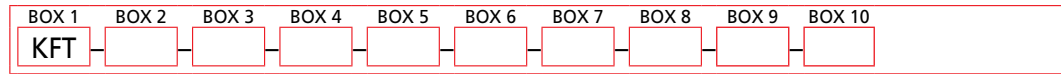
Note:

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.

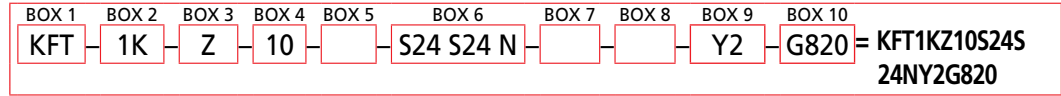
Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
K3	0.25	2K3/ KK3	0.12	3KZ1/ 27KZ1	0.05
K10	0.09	2K10/ KK10	0.05	3KZ3/ 27KZ3	0.03
K25	0.02	2K25/ KK25	0.01	3KZ5/ 27KZ5	0.02
KAS3	0.10	2KAS3/ KKAS3	0.05	3KZ10/ 27KZ10	0.02
KAS5	0.08	2KAS5/ KKAS5	0.04	3KZ25/ 27KZ25	0.01
KAS10	0.05	2KAS10/ KKAS10	0.03	3K3	0.08
KDZ1	0.24	2KDZ1	0.12	3K10	0.03
KDZ3	0.12	2KDZ3	0.06	3K25	0.01
KDZ5	0.10	2KDZ5	0.05	3KAS3/ 27KAS3	0.03
KDZ10	0.06	2KDZ10	0.03	3KAS5/ 27KAS5	0.02
KDZ25	0.04	2KDZ25	0.02	3KAS10/ 27KAS10	0.02

Filter Model Number Selection

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

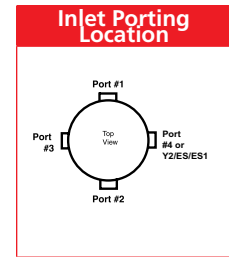


Example: NOTE: One option per box



BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Element Size and Length	Media Type	Element Part Number
KFT	1 K, KK 2 K	Omit = E media (cellulose) Z = Excellement® Z-Media® (synthetic) AS = Anti-Static Pleat Media (synthetic) ZW = Aqua-Excellement™ ZW media DZ = DirtCatcher® with Excellement® Z-Media®	1 = 1 μ Z, ZW, and DZ media 3 = 3 μ AS, E, Z, ZW, and DZ media 5 = 5 μ AS, Z, ZW, and DZ media 10 = 10 μ AS, E, M, Z, ZW, and DZ media 25 = 25 μ E, M, Z, ZW, and DZ media

BOX 5	BOX 6 Specification of all 4 ports is required			
Seal Material	Inlet Porting			
Omit = Buna N H = EPR V = Viton® H.5 = Skydrol® Compatibility	Port 1 (Standard) N = None	Port 2 (Optional) N = None	Port 3 (Optional) N = None P8 = 1/2" NPTF	Port 4 (Optional) N = None P2 = 1/8" NPTF P8 = 1/2" NPTF
	P12 = 3/4" NPTF P16 = 1" NPTF P20 = 1 1/4" NPTF P24 = 1 1/2" NPTF P32 = 2" NPTF S8 = SAE-8 S12 = SAE-12 S16 = SAE-16 S20 = SAE-20 S24 = SAE-24	P12 = 3/4" NPTF P16 = 1" NPTF P20 = 1 1/4" NPTF P24 = 1 1/2" NPTF P32 = 2" NPTF S8 = SAE-8 S12 = SAE-12 S16 = SAE-16 S20 = SAE-20 S24 = SAE-24	P12 = 3/4" NPTF P16 = 1" NPTF P20 = 1 1/4" NPTF P24 = 1 1/2" NPTF P32 = 2" NPTF S8 = SAE-8 S12 = SAE-12 S16 = SAE-16 S20 = SAE-20 S24 = SAE-24	P12 = 3/4" NPTF P16 = 1" NPTF P20 = 1 1/4" NPTF P24 = 1 1/2" NPTF P32 = 2" NPTF S8 = SAE-8 S12 = SAE-12 S16 = SAE-16 S20 = SAE-20 S24 = SAE-24



NOTES:

Box 2. Number of elements must equal 1 when using KK elements.

Box 3. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. K specifies one 9" element; KK specifies one 18" element. Example: KKZ10

Box 5. 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. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 7. See also "Accessories for Tank-Mounted Filters," page 307.

Box 9. YC and Y5 are not available with the G820.

BOX 7	BOX 8	BOX 9
Outlet Porting Options	Optional Mounting Flange	Dirt Alarm® Options
Omit = 1 1/2" NPT male C = Check valve D = Diffuser CD = Check valve & diffuser T = 13" Tube extension A = Non-threaded outlet	Omit = None B = Flange with 4 holes BW = Flange with no holes	Omit = None Y2 = Back-mounted tri-color gauge (located in Port 4) Visual Y2C = Bottom-mounted tri-color gauge in cap Y5 = Back-mounted gauge in cap Electrical ES = Electric switch (located in port 4) ES1 = Heavy-duty electric switch with conduit connector (located in port 4)

BOX 10
Additional Options
Omit = None G2293 = Cork gasket G820 = Steel cap