

Medium Pressure Filter

KF5



Features and Benefits

- Meets HF4 automotive standard
- Offered in pipe, SAE straight thread, flange and ISO 228 porting
- Available with NPTF inlet and outlet female test ports
- KFN5 non-bypass version with high collapse elements also available
- WKF5 model for water service also available – refer to Section 7 of this catalog
- Various Dirt Alarm® options
- Allows consolidation of inventoried replacement elements by using K-size elements
- Also available with DirtCatcher® elements (KD & KKD)

Model No. of filter in photograph is KF51KZ10SD5.

100 gpm
380 L/min
500 psi
35 bar

GH

RLT

KF5

SRLT

K9

2K9

3K9

QF5

3QF5

QFD2

QFD5

QF15

QLF15

SSQLF15

Applications



INDUSTRIAL



AUTOMOTIVE
MANUFACTURING



MINING
TECHNOLOGY



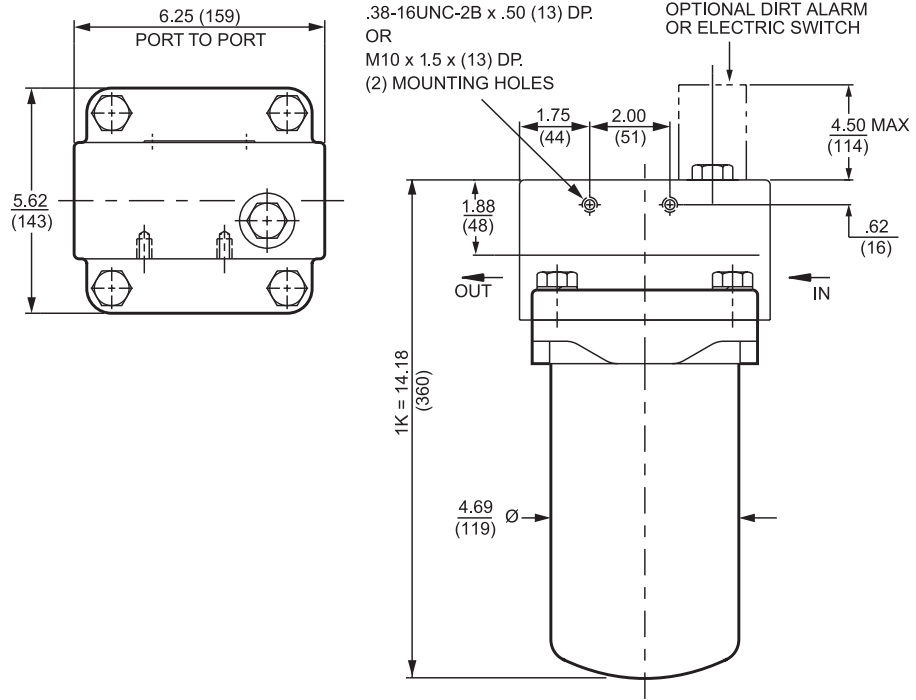
STEEL
MAKING



MOBILE
VEHICLES

Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	500 psi (35 bar)
Min. Yield Pressure:	1500 psi (100 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	300 psi (35 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)
Porting Head:	Grey Cast Iron
Element Case:	Steel
Weight of KF5-1K:	23.2 lbs. (10.5 kg)
Element Change Clearance:	2.0" (51 mm)



Metric dimensions in ().

Element Performance Information

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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
K3	6.8	7.5	10.0	N/A	N/A
K10	15.5	16.2	18.0	N/A	N/A
KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KAS3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KAS5	2.5	3.0	4.0	4.8	6.3
KZ10/KAS10	7.4	8.2	10.0	8.0	10.0
KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3	N/A	N/A	N/A	4.0	4.8
KZW5	N/A	N/A	N/A	5.1	6.4
KZW10	N/A	N/A	N/A	6.9	8.6
KZW25	N/A	N/A	N/A	15.4	18.5

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
K3	54				
K10	44				
KZ1	112	KZW1	61	KDZ1	89
KZ3/KAS3	115	KZW3	64	KDZ3	71
KZ5/KAS5	119	KZW5	63	KDZ5	100
KZ10/KAS10	108	KZW10	67	KDZ10	80
KZ25	93	KZW25	79	KDZ25	81

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

Flow Direction: Outside In

Element Nominal Dimensions: 3.9" (99 mm) O.D. x 9.0" (230 mm) long

Medium Pressure Filter

KF5

Type Fluid Appropriate Schroeder Media

Petroleum Based Fluids	All E media (cellulose), Z-Media® and ASP media (synthetic)
High Water Content	All Z-Media® (synthetic), 3, 5 and 10 µ 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 and 3 and 10 µ E media (cellulose) with H (EPR) seal designation, 3, 5 and 10 µ ASP media (synthetic)
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation and W media (water removal) with H.5 seal designation (EPR seals & stainless steel wire mesh in element, and light oil coating on housing exterior), 3, 5 and 10 µ ASP media (synthetic)

Fluid Compatibility

GH

RLT

KF5

SRLT

Skydrol® is a registered trademark of Solutia Inc.

Element Selection

K9

Based on Flow Rate

2K9

3K9

QF5

3QF5

QFD2

QFD5

QF15

QLF15

SSQLF15

Pressure Drop Information

Based on Flow Rate and Viscosity

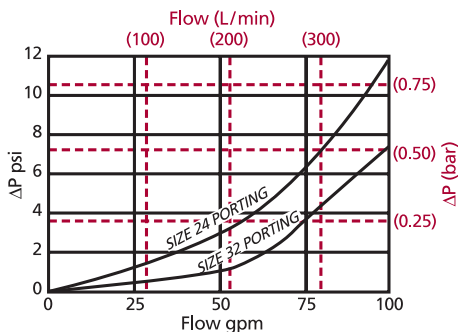
Pressure	Series	Element	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve.				
		Part No.					
To 500 psi (34 bar)	E Media	K3	1K3	KF5 housing uses only one K-size element.			
		K10	1K10				
		K25	1K25				
	Z-Media®	KZ1	1KZ1				
		KZ3/KAS3	1KZ3				
		KZ5/KAS5	1KZ5				
		KZ10/KAS10	1KZ10				
		KZ25	1KZ25				
Flow	gpm	0	20	40	60	80	100
	(L/min)	0	50	150	250	380	

Shown above are the elements most commonly used in this housing.

Note: Contact factory regarding use of E media in High Water Content, Invert Emulsion and Water Glycol Applications. For more information, refer to Fluid compatibility: Fire Resistant Fluids, pages 19 and 20.

ΔP_{housing}

KF5 ΔP_{housing} for fluids with sp gr = 0.86:



sp gr = specific gravity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

ΔP_{element}

ΔP_{element} = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

K3	.25		
K10	.09		
K25	.02		
KZ1	.20	KDZ1	.24
KZ3/KAS3	.10	KDZ3	.12
KZ5/KAS5	.08	KDZ5	.10
KZ10/KAS10	.05	KDZ10	.06
KZ25	.04	KDZ25	.04
		KZW1	.43
		KZW3	.32
		KZW5	.28
		KZW10	.23
		KZW25	.14

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).

$$\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + \Delta P_{\text{element}}$$

Exercise:

Determine ΔP at 50 gpm (189 L/min) for KF51KZ10P24D5 using 200 SUS (44 cSt) fluid.

Solution:

$$\Delta P_{\text{housing}} = 3.0 \text{ psi } [.20 \text{ bar}]$$

$$\Delta P_{\text{element}} = 50 \times .05 \times (200 \div 150) = 3.3 \text{ psi}$$

$$\text{or}$$

$$= [189 \times (.05 \div 54.9) \times (44 \div 32) = .24 \text{ bar}]$$

$$\Delta P_{\text{total}} = 3.0 + 3.3 = 6.3 \text{ psi}$$

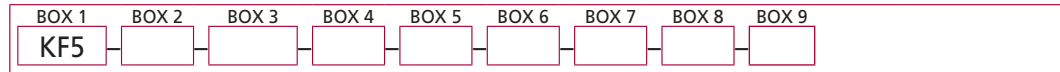
$$\text{or}$$

$$= [.20 + .24 = .44 \text{ bar}]$$

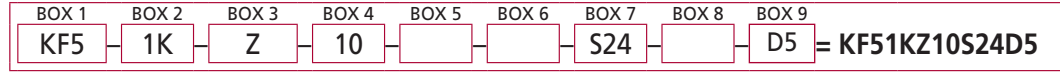
Notes

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder KF5:



Example: NOTE: One option per box



Filter Series	Number & Size of Elements	Media Type	Micron Rating
KF5 <small>(See Section 7 for Water Service version)</small>	1K	Omit = E media (Cellulose) ASP = Anti-Static Pleated media Z = Excellement® Z-Media® (Synthetic) ZW = Aqua-Excellement® ZW media W = Water Removal media M = M media (Reusable Metal) DZ = DirtCatcher® Excellement® Z-Media®	1 = 1 μ (Z, ZW and DZ media) 3 = 3 μ (E, AS, Z, ZW and DZ media) 5 = 5 μ (AS, Z, ZW and DZ media) 10 = 10 μ (E, AS, Z, ZW, M and DZ media) 25 = 25 μ (E, Z, ZW, M and DZ media) 60 = 60 μ (M media)
KFN5 <small>(Non-bypassing: requires ZX or MXX high collapse elements)</small>			

BOX 5	BOX 6	BOX 7	BOX 8
Seal Material	Magnetic Option	Porting Options	Test Port Options
Omit = Buna N H = EPR V = Viton® H.5 = Skydrol® Compatibility	Omit = None M = Magnet Inserts	P24 = 1½" NPTF P32 = 2" NPTF S24 = SAE-24 S32 = SAE-32 F24 = 1½" SAE split 4-bolt flange Code 61 B24 = ISO 228 G-1½"	Omit = None L = Two ¼" NPTF inlet and outlet female test ports

BOX 9	
Dirt Alarm® Options	
	Omit = None
Visual	D = Pointer D5 = Visual pop-up
Visual with Thermal Lockout	D8 = Visual w/ thermal lockout
Electrical	MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable MS5LC = Low current MS5 MS10 = Electrical w/ DIN connector (male end only) MS10LC = Low current MS10 MS11 = Electrical w/ 12 ft. 4-conductor wire MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only) MS12LC = Low current MS12 MS16 = Electrical w/ weather-packed sealed connector MS16LC = Low current MS16 MS17LC = Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T = MS5 (see above) w/ thermal lockout MS5LCT = Low current MS5T MS10T = MS10 (see above) w/ thermal lockout MS10LCT = Low current MS10T MS12T = MS12 (see above) w/ thermal lockout MS12LCT = Low current MS12T MS16T = MS16 (see above) w/ thermal lockout MS16LCT = Low current MS16T MS17LCT = Low current MS17T
Electrical Visual	MS = Cam operated switch w/ ½" conduit female connection MS13 = Supplied w/ threaded connector & light MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT = MS13 (see above), direct current, w/ thermal lockout MS13DCLCT = Low current MS13DCT MS14DCT = MS14 (see above), direct current, w/ thermal lockout MS14DCLCT = Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5.
Example: KZ10V
High collapse media only available with KFN5.

Box 5. For options H, V, 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.
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Box 7. B porting supplied with metric mounting holes.