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

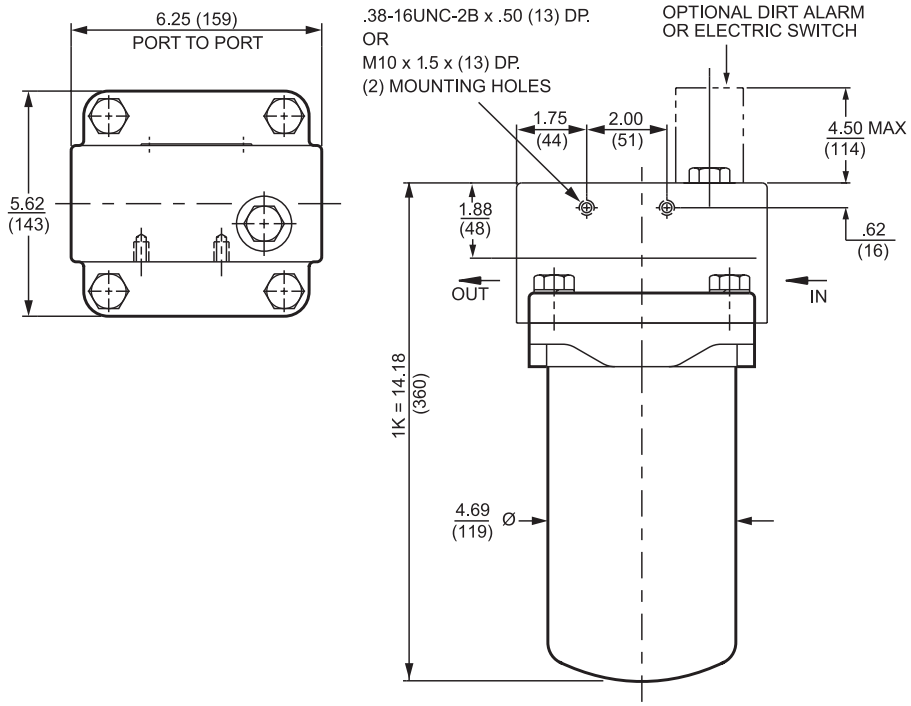
Applications

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)

KF5 Medium Pressure Filter



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

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® (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)

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Element Selection
Based on Flow Rate

Pressure	Element Series	Element Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve.
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

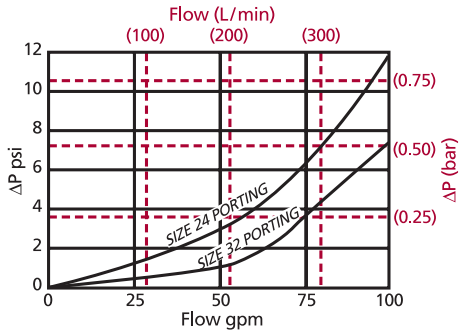
Shown above are the elements most commonly used in this housing.

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.*

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

KF5 $\Delta P_{housing}$ for fluids with sp gr = 0.86:



sp gr = specific gravity

$\Delta P_{element}$

$\Delta P_{element}$ = 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	**KZW1**	.43
KZ3/KAS3	.10	**KDZ3**	.12	**KZW3**	.32
KZ5/KAS5	.08	**KDZ5**	.10	**KZW5**	.28
KZ10/KAS10	.05	**KDZ10**	.06	**KZW10**	.23
KZ25	.04	**KDZ25**	.04	**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).

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

Notes

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

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

Solution:

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

$\Delta P_{element}$ = 50 x .05 x (200÷150) = 3.3 psi
or
= [189 x (.05÷54.9) x (44÷32) = .24 bar]

ΔP_{total} = 3.0 + 3.3 = 6.3 psi
or
= [.20 + .24 = .44 bar]

KF5 Medium Pressure Filter

Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
KF5								

Example: *NOTE: One option per box*

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	
KF5	1K	Z	10			S24		D5	= KF51KZ10S24D5

BOX 1 — Filter Series

- KF5 (See Section 7 for Water Service version)
- KFN5 (Non-bypassing: requires ZX or MXX high collapse elements)

BOX 2 — Number & Size of Elements

- 1K

BOX 3 — Media Type

- 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®

BOX 4 — Micron Rating

- 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)

BOX 5 — Seal Material

- Omit = Buna N
- H = EPR
- V = Viton®
- H.5 = Skydrol® Compatibility

BOX 6 — Magnetic Option

- Omit = None
- M = Magnet Inserts

BOX 7 — Porting Options

- 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"

BOX 8 — Test Port Options

- 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.