



Features and Benefits

- Extremely versatile multiple inlet and outlet ports; can be used alone or in series with another K9
- Top loading for easy access for element change-out
- Allows consolidation of inventoried replacement elements by using K-size elements
- Multiple inlet and outlet porting options reduce the need for additional adaptors on installation
- Can be fitted with test ports for oil sampling
- Small profile allows filter to be mounted in tight areas
- Various Dirt Alarm® options
- Meets HF4 automotive standard

100 gpm
380 L/min
900 psi
60 bar

ST
SKB
Housings
MTA
MTB
ZT
KT
RT
RTI
KFT
LRT
BFT
QT
KTK
LTK

Model No. of filter in photograph is K91KZ5BP20NP20ND5C.



INDUSTRIAL



**AUTOMOTIVE
MANUFACTURING**



**MACHINE
TOOL**



**POWER
GENERATION**



**STEEL
MAKING**



**PAPER
INDUSTRY**



AGRICULTURE



**MOBILE
VEHICLES**

Applications

Accessories
for Tank-
Mounted
Filters

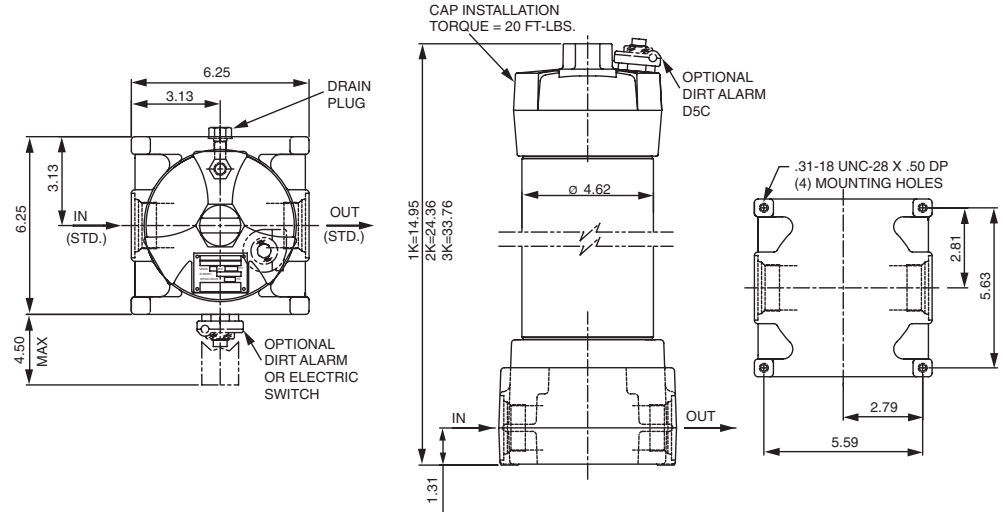
PAF1
MAF1
MF2
TF1
KF3
LF1—2"
MLF1
SRLT
RLT

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	900 psi (60 bar)
Min. Yield Pressure:	3200 psi (220 bar)
Rated Fatigue Pressure:	750 psi (52 bar) per NFPA T2.6.1-R1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 80 psi (5.5 bar)
Porting Base & Cap:	Cast Aluminum
Element Case:	Steel
Weight of K9-1K:	19 lbs. (8.6 kg)
Weight of K9-2K:	30 lbs. (13.6 kg)
Weight of K9-3K:	41 lbs. (18.6 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

K9
2K9
3K9
QF15
QLF15
SSQLF15
QFD5

K9 Medium Pressure Filter Patent Pending



This filter is available in additional porting options not explicitly shown here. Contact factory for details.

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	<1.0	<1.0	<2.0	<4.0	4.8
KZ5	2.5	3.0	4.0	4.8	6.3
KZ10	7.4	8.2	10.0	8.0	10.0
KZ25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
K3	54	KK3	108	27K3	162
K10	44	KK10	88	27K10	132
KZ1	112	KKZ1	224	27KZ1	336
KZ3	115	KKZ3	230	27KZ3	345
KZ5	119	KKZ5	238	27KZ5	357
KZ10	108	KKZ10	216	27KZ10	324
KZ25	93	KKZ25	186	27KZ25	279

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
 27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E (cellulose) and Z (synthetic) media
High Water Content	All Z (synthetic) media
Invert Emulsions	10 and 25 μ Z (synthetic) media
Water Glycols	3, 5, 10 and 25 μ Z (synthetic) media
Phosphate Esters	All Z (synthetic) media with H (EPR) seal designation and 3 and 10 μ E (cellulose) media with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 μ Z (synthetic) media with H.5 seal designation and W (water removal) media with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

Fluid Compatibility

Skydrol is a registered trademark of Solutia Inc.

- ST
- SKB Housings
- MTA
- MTB
- ZT
- KT
- RT
- RTI
- KFT
- LRT
- BFT
- QT
- KTK
- LTK

Pressure	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.				
	Series	Part No.					
To 900 psi (60 bar)	E Media	K3	1K3		2K3†	3K3	
		K10	1K10				
		K25	1K25				
	Z Media	KZ1	1KZ1		2KZ1†		
		KZ3	1KZ3				
		KZ5	1KZ5				
		KZ10	1KZ10				
		KZ25	1KZ25				
Flow	gpm	0	20	40	60	80	100
	(L/min)	0	50	150	250	380	

Element Selection
Based on Flow Rate

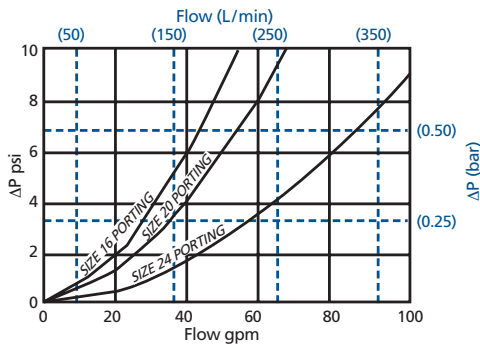
Accessories for Tank-Mounted Filters

†Double and triple stacking of K-size elements can be replaced by single KK & 27K elements, respectively. 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}

K9 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):

	1K	2K	3K
K3	.25	.12	.08
K10	.09	.05	.03
K25	.02	.01	.01
KZ1	.20	.10	.05
KZ3	.10	.05	.03
KZ5	.08	.04	.02
KZ10	.05	.03	.02
KZ25	.04	.02	.01

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

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

Pressure Drop Information

Based on Flow Rate and Viscosity

- PAF1
- MAF1
- MF2
- TF1
- KF3
- LF1—2"
- MLF1
- SRLT
- RLT
- KF8

Notes

ΔP_{filter} = ΔP_{housing} + ΔP_{element}

Exercise:

Determine ΔP at 80 gpm (303 L/min) for K93KZ3BP20NP20ND5C using 200 SUS (44 cSt) fluid.

Solution:

ΔP_{housing} = 6.0 psi [.41 bar]

ΔP_{element} = 80 x .03 x (200 ÷ 150) = 3.2 psi
or
= [303 x (.03 ÷ 54.9) x (44 ÷ 32) = .23 bar]

ΔP_{total} = 6.0 + 3.2 = 9.2 psi
or
= [.41 + .23 = .64 bar]

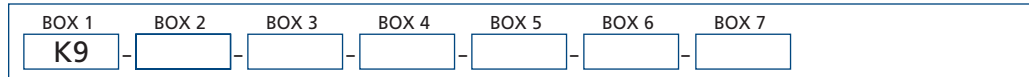
K9

- 2K9
- 3K9
- QF15
- QLF15
- SSQLF15
- QFD5

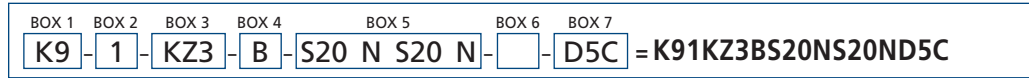
K9 Medium Pressure Filter Patent Pending

Filter Model Number Selection

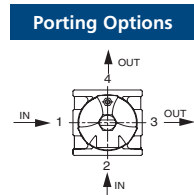
How to Build a Valid Model Number for a Schroeder K9:



Example: NOTE: Only box 6 may contain more than one option



Filter Series	Number of Elements	Element Part Number			Seal Material	
K9	1	K	KK	27K	B = Buna N V = Viton® H = EPR H.5 = Skydrol® compatibility	
	2	K3	KK3	27K3		= 3 μ E media (cellulose)
	3	K10	KK10	27K10		= 10 μ E media (cellulose)
		K25	KK25	27K25		= 25 μ E media (cellulose)
		KZ1	KKZ1	27KZ1		= 1 μ Excellement® Z media (synthetic)
		KZ3	KKZ3	27KZ3		= 3 μ Excellement Z media (synthetic)
		KZ5	KKZ5	27KZ5		= 5 μ Excellement Z media (synthetic)
		KZ10	KKZ10	27KZ10		= 10 μ Excellement Z media (synthetic)
		KZ25	KKZ25	27KZ25		= 25 μ Excellement Z media (synthetic)
		KM10				= K size 10 μ M media (reusable metal)
		KM25				= K size 25 μ M media (reusable metal)
		KM60				= K size 60 μ M media (reusable metal)
		KM150				= K size 150 μ M media (reusable metal)
		KM260				= K size 260 μ M media (reusable metal)
		KW				= K size W media (water removal)



BOX 5 Specification of all 4 ports is required

Porting			
Port 1 (Standard)	Port 2	Port 3	Port 4
N = None P16 = 1" NPTF P20 = 1½" NPTF P24 = 1½" NPTF S16 = SAE-16 S20 = SAE-20 S24 = SAE-24 B16 = ISO 228 G-1" B20 = ISO 228 G-1¼" B24 = ISO 228 G-1½"	N = None F16 = 1" SAE 4-bolt flange Code 61 F20 = 1¼" SAE 4-bolt flange Code 61 F24 = 1½" SAE 4-bolt flange Code 61 S16 = SAE-16 S20 = SAE-20 S24 = SAE-24 B16 = ISO 228 G-1" B20 = ISO 228 G-1¼" B24 = ISO 228 G-1½"	N = None P16 = 1" NPTF P20 = 1¼" NPTF P24 = 1½" NPTF S16 = SAE-16 S20 = SAE-20 S24 = SAE-24 B16 = ISO 228 G-1" B20 = ISO 228 G-1¼" B24 = ISO 228 G-1½"	N = None P16 = 1" NPTF P20 = 1¼" NPTF P24 = 1½" NPTF F16 = 1" SAE 4-bolt flange Code 61 F20 = 1¼" SAE 4-bolt flange Code 61 F24 = 1½" SAE 4-bolt flange Code 61 S16 = SAE-16 S20 = SAE-20 S24 = SAE-24 B16 = ISO 228 G-1" B20 = ISO 228 G-1¼" B24 = ISO 228 G-1½"

NOTES:

- Box 2. Double and triple stacking of K-size elements can be replaced by KK and 27K elements, respectively. Number of elements must equal 2 when using KK or 27K elements.
- Box 3. Replacement element part numbers are identical to contents of Boxes 3 and 4.
- Box 4. 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. Viton is a registered trademark of DuPont Dow Elastomers. Skydrol is a registered trademark of Solutia Inc.
- Box 7. If location 1 is used as inlet port, dirt alarm will occupy location 2. If location 2 is used as inlet port, dirt alarm will occupy location 1. If dual inlet ports are specified, the only dirt alarm option is pop-up indicator in cap (D5C).

Options	Dirt Alarm® Options
Omit = None U = Test point in cap (upstream) UU = Test point in head (upstream and downstream) X = Blocked by-pass	Omit = None Visual Visual with Thermal Lockout Electrical Electrical with Thermal Lockout Electrical Visual Electrical Visual with Thermal Lockout
	D5 = Visual pop-up D5C = D5 in cap D8 = Visual w/ thermal lockout D8C = D8 in cap MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable MSSLC = 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 MS15DC = Electrical, direct current normally open, for DC use only MS15DCNC = Electrical, direct current normally closed, for DC use only MS16 = Electrical w/ weather-packed sealed connector MS16LC = Low current MS16 MS17LC = Electrical w/ 4 pin Brad Harrison male connector 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 MS13 = Supplied w/ threaded connector & light MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end) 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