Top-Ported Suction Filter SKF3

Features and Benefits

- Top-ported suction filter for hydrostatic suction service
- Easy element changeout
- Inlet filter protects pump, reduces start-up failures
- 2.5 psi suction bypass available

25 gpm
95 L/min
300 psi
20 bar

Model No. of filter in photograph is SKF31KTZ25S2.5Y

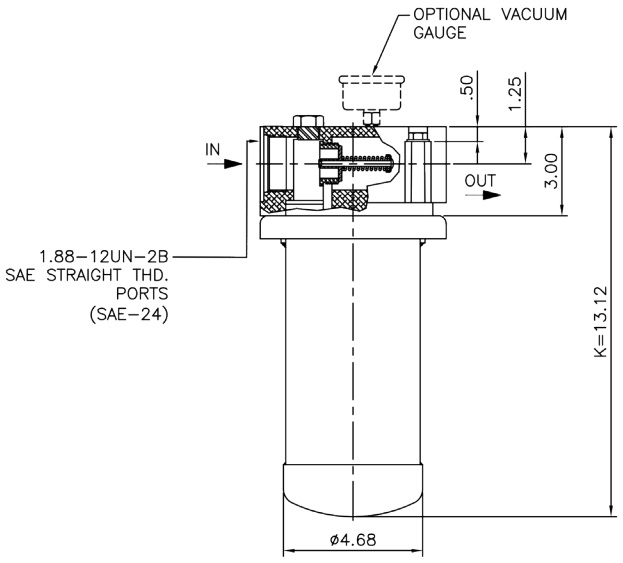
Filter Housing Specifications

Flow Rating:	Up to 25 gpm (95 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	300 psi (20 bar)
Min. Yield Pressure:	1000 psi (70 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	290 psi (20 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 2.5 psi (0.2 bar) Full Flow: Contact Factory
Porting Base:	Die Cast Aluminum
Element Case:	Steel
Weight of SKF3:	10.5 lbs. (4.8 kg)
Element Change Clearance:	1.50" (40 mm) for all lengths

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E-Media (cellulose), Z-Media®
High Water Content	All Z-Media®
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-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
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation

SKF3 Top-Ported Suction Filter



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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
KTZ1/GKTZ1	<1.0	<1.0	<1.0	<4.0	4.2
KTZ3/GKTZ3	<1.0	<1.0	<2.0	<4.0	4.8
KTZ5/GKTZ5	2.5	3.0	4.0	4.8	6.3
KTZ10/GKTZ10	7.4	8.2	10.0	8.0	10.0
KTZ25/GKTZ25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

Element	DHC (gm)
KTZ1/GKTZ1	112
KTZ3/GKTZ3	115
KTZ5/GKTZ5	119
KTZ10/GKTZ10	108
KTZ25/GKTZ25	93

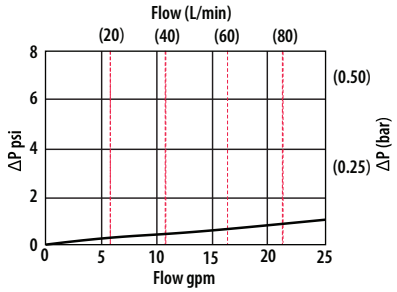
Element Collapse Rating: 150 psid (10 bar) for standard elements

Flow Direction: Inside Out

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

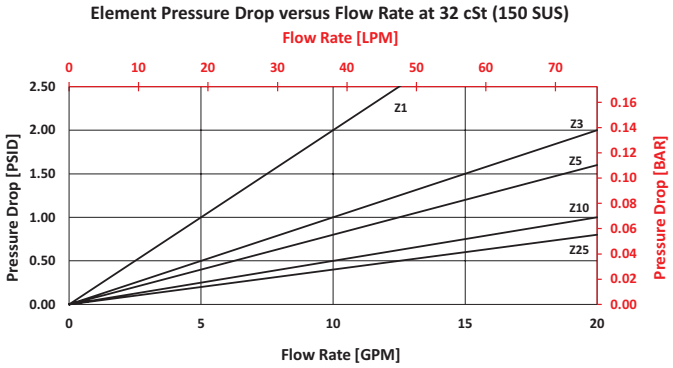
$\Delta P_{housing}$

SKF3 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

KTZ1



Curves Also Available Upon Request

$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * \nu_f)$$

Exercise:

Determine ΔP_{filter} at 20 gpm (76 L/min) for SKF31KTZ25S2.5Y using 200 SUS (44 cSt) fluid.

Use the housing pressure curve to determine ΔPhousing at 20 gpm. In this case, ΔPhousing is 0.7 psi (.05 bar) on the graph for the SKF3 housing.

Use the element pressure curve to determine ΔPelement at 20 gpm. In this case, ΔPelement is 0.8 psi (.06 bar) according to the graph for the 1KTZ25 element.

Because the viscosity in this sample is 200 SUS (44 cSt), we determine the Viscosity Factor (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, ΔPfilter , is calculated by adding ΔPhousing with the true element pressure differential, (ΔPelement*νf). The ΔPelement from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$\Delta P_{housing}$ = 0.7 psi [.21 bar] | $\Delta P_{element}$ = 0.8 psi [.415 bar]

ν_f = 200 SUS (42.4 cSt) / 150 SUS (32 cSt) = 1.333

ΔP_{filter} = 0.7 psi + (0.8 psi * 1.333) = 1.8 psi

OR

ΔP_{filter} = .05 bar + (.06 bar * 1.333) = .13 bar

SKF3 Top-Ported Suction Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder SKF3:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
SKF3							

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
SKF3	1K	Z	25		S	2.5	Y	**=SKF31KTZ25S2.5Y**

BOX 1

Filter Series
SKF3
GSKF3 (GeoSeal®)

BOX 2

Number & Size of Elements
1KT
GeoSeal®
1KTG

BOX 3

Media Type
Omit = E media (cellulose)
Z = Excellement® Z-Media® (synthetic)
M = M Media (reusable metal)

BOX 4

Micron Rating	
1 = 1µ	(Z-Media)
3 = 3µ	(E, Z-Media)
5 = 5µ	(Z-Media)
10 = 10µ	(E, Z and M-Media)
25 = 25µ	(E, Z and M-Media)
60 = 60µ	(M-Media)
150 = 150µ	(M-Media)

BOX 5

Seal Material
Omit = Buna N
H = EPR
V = Viton®
H.5 = Skydrol® Compatibility
W = Buna N with anodized parts

BOX 6

Magnetic Core
Omit = No Magnetic Core
M = Magnetic Core

BOX 7

Porting
P = 1 1/2" NPTF
S = SAE 24
F = 1½" SAE-4-bolt flange Code 61
B = ISO 228 G-1½"

BOX 8

Bypass	
Omit =	No Bypass
2.5 =	2.5 psi Suction Bypass

BOX 9

Dirt Alarm® Options		
	Omit =	None
Visual	Y =	Vacuum guage
Electrical	VS =	Electrical Vacuum Switch
	VS1 =	Heavy-Duty Vacuum Switch

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, and 4.
Example: KTZ25

Box 5. For options H, W, 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. For option F, bolt thread depth .63" (16 mm). B porting option supplied with metric mounting holes.