

Top-Ported Pressure Filter **VF60**



Features and Benefits

- Top-ported high pressure filter
- Special filter element design provides aftermarket benefits
- Offered in pipe, SAE straight thread and ISO 228 porting
- Various dirt alarm options available

Model No. of filter in photograph is VF609VZ10SD5.



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MOBILE
VEHICLES

70 gpm
265 L/min
6000 psi
415 bar

NF30
NFS30
YF30
DF40
CF40
CFX30
RF60
RFS50
CF60

VF60

Applications

KF30
TF50
KF50
KC50
KFH50
MKF50
KC65

FOF60-03

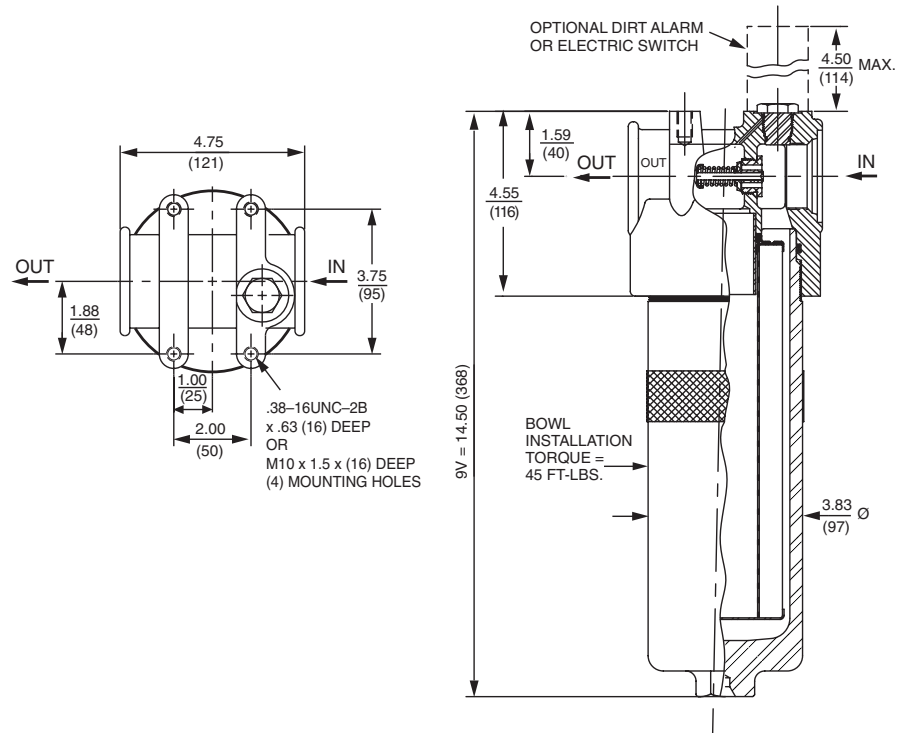
Filter Housing Specifications

NOF30-05
NOF50-760
NMF30
RMF60

Cartridge
Elements

Flow Rating:	Up to 70 gpm (265 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	15,500 psi (1070 bar)
Rated Fatigue Pressure:	3300 psi (230 bar), per NFPA T2.6.1-R1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 50 psi (3.5 bar) Full Flow: 65 psi (4.5 bar)
Porting Head:	Ductile Iron
Element Case:	Steel
Weight of VF60-9V:	24.0 lbs. (10.9 kg)
Element Change Clearance:	4.0" (103 mm)

VF60 Top-Ported 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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_{x(e)} \geq 200$	$\beta_{x(e)} \geq 1000$
9V3	6.8	7.5	10.0	N/A	N/A
9V10	15.5	16.2	18.0	N/A	N/A
9VZ1	<1.0	<1.0	<1.0	<4.0	4.2
9VZ3	<1.0	<1.0	<2.0	<4.0	4.8
9VZ5	2.5	3.0	4.0	4.8	6.3
9VZ10	7.4	8.2	10.0	8.0	10.0
9VZ25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

Element	DHC (gm)
9V3	25
9V10	12
9VZ1	55
9VZ3	57
9VZ5	62
9VZ10	60
9VZ25	61

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

Flow Direction: Outside In

Element Nominal Dimensions: 9V: 2.9" (75 mm) O.D. x 9.5" (240 mm) long

Top-Ported Pressure Filter VF60

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
Skydrol®	3, 5, 10 and 25 μ Z (synthetic) media with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

Fluid Compatibility	
	NF30
	NFS30
	YF30
	DF40

Skydrol is a registered trademark of Solutia Inc.

Pressure	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 50 psi (3.5 bar) bypass valve.							
	Series	Part No.	9VZ1			Contact Factory				
To 6000 psi (415 bar)	Z Media	9VZ1	9VZ1			Contact Factory				
		9VZ3	9VZ3							
		9VZ5	9VZ5							
		9VZ10	9VZ10							
		9VZ25	9VZ25							
Flow	Flow	gpm	0	10	20	30	40	50	60	70
		(L/min)	0	50	100	150	200	265		

Element Selection Based on Flow Rate	
	CF40
	CFX30
	RF60
	RFS50
	CF60

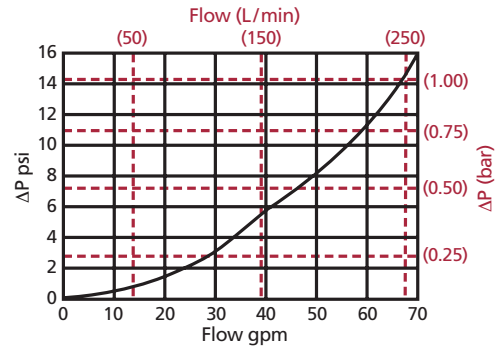
Shown above are the elements most commonly used in this housing.

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.

VF60

ΔP_{housing}

VF60 ΔP_{housing} for fluids with sp gr = 0.86:



sp gr = specific gravity

ΔP_{element}

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

El. ΔP factors @ 150 SUS (32 cSt):

	9V
9V3	.32
9V10	.24
9VZ1	.34
9VZ3	.21
9VZ5	.13
9VZ10	.11
9VZ25	.06

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

	KF30
	TF50
	KF50
	KC50
	KFH50
	MKF50
	KC65

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

Notes

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

Exercise:

Determine ΔP at 40 gpm (150 L/min) for VF609VZ3SD5 using 200 SUS (44 cSt) fluid.

Solution:

$$\Delta P_{\text{housing}} = 6.0 \text{ psi } [.38 \text{ bar}]$$

$$\begin{aligned} \Delta P_{\text{element}} &= 40 \times .21 \times (200 \div 150) = 11.2 \text{ psi} \\ &\text{or} \\ &= [150 \times (.21 \div 54.9) \times (44 \div 32)] = .79 \text{ bar} \end{aligned}$$

$$\begin{aligned} \Delta P_{\text{total}} &= 6.0 + 11.2 = 17.2 \text{ psi} \\ &\text{or} \\ &= [.38 + .79 = 1.17 \text{ bar}] \end{aligned}$$

	FOF60-03
	NOF30-05
	NOF50-760
	NMF30
	RMF60
	Cartridge Elements

VF60 Top-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder VF60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6
VF60	-	-	-	-	-

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6				
VF60	-	9	-	VZ1	-	S	-		= VF609VZ1S

BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Element Length (in)	Element Size and Media	
VF60	9	V3 = V size 3 μ E media (cellulose) V10 = V size 10 μ E media (cellulose) VZ1 = V size 1 μ Excellement® Z media (synthetic) VZ3 = V size 3 μ Excellement Z media (synthetic) VZ5 = V size 5 μ Excellement Z media (synthetic) VZ10 = V size 10 μ Excellement Z media (synthetic) VZ25 = V size 25 μ Excellement Z media (synthetic) VM150 = V size 150 μ M media (reusable metal)	
			Seal Material
			Omit = Buna N V = Viton® H = EPR

BOX 5	BOX 6
Inlet Port	Dirt Alarm® Options
P = 1¼" NPTF	Omit = None
S = SAE-20	Visual D5 = Visual pop-up
B = ISO 228 G-1¼"	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 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, and 4.
 Example: 9VZ1V
 E media (cellulose) elements are only available with Buna N seals.

Box 4. Viton is a registered trademark of DuPont Dow Elastomers.

Box 5. B porting option supplied with metric mounting holes.