

Top-Ported Pressure Filter

RF60



Features and Benefits

- Top-ported high pressure filter
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- Available with non-bypass option with high collapse element
- Standard drain plug in bowl for easy servicing
- Various dirt alarm options available

30 gpm
115 L/min
6000 psi
415 bar

Model No. of filter in photograph is RF608R10P.



**MINING
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**MOBILE
VEHICLES**



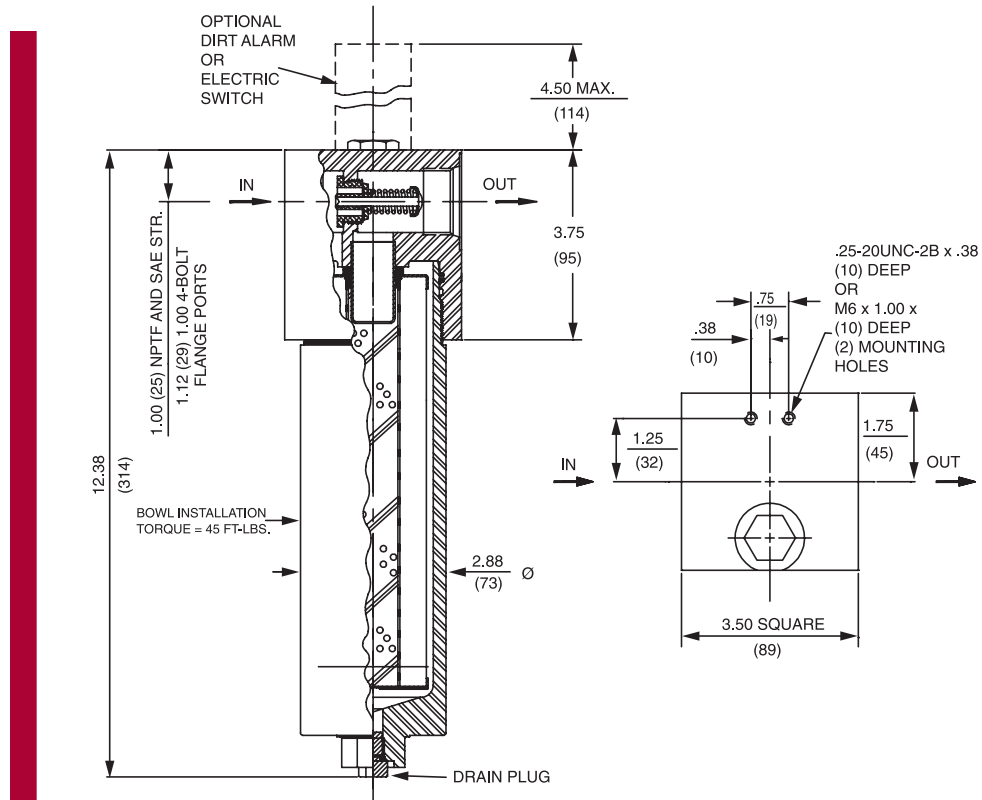
CONSTRUCTION

Applications

Flow Rating:	Up to 30 gpm (115 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	18,000 psi (1241 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	2300 psi (159 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: 56 psi (3.9 bar) Non-bypassing model has a blocked bypass.
Porting Head:	Steel
Element Case:	Steel
Weight of RF60-8R:	15.75 lbs. (7.2 kg)
Element Change Clearance:	3.0" (75 mm)

Filter Housing Specifications

- NF30
- NFS30
- YF30
- CFX30
- PLD
- DF40
- CF40
- PF40
- RFS50
- RF60**
- CF60
- CTF60
- VF60
- LW60
- KF30
- TF50
- KF50
- KC50
- MKF50
- KC65
- NOF30-05
- NOF50-760
- FOF60-03
- NMF30
- RMF60
- Cartridge Elements
- HS60
- MHS60
- KFH50



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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(d) \geq 200$	$\beta_x(d) \geq 1000$
8R3	6.8	7.5	10.0	N/A	N/A
8R10	15.5	16.2	18.0	N/A	N/A
8RZ1	<1.0	<1.0	<1.0	<4.0	4.2
8RZ3	<1.0	<1.0	<2.0	<4.0	4.8
8RZ5	2.5	3.0	4.0	4.8	6.3
8RZ10	7.4	8.2	10.0	8.0	10.0
8RZ25	18.0	20.0	22.5	19.0	24.0
8RZX3	<1.0	<1.0	<2.0	4.7	5.8
8RZX10	7.4	8.2	10.0	8.0	9.8

Dirt Holding Capacity

Element	DHC (gm)
8R3	6
8R10	7
8RZ1	33
8RZ3	26
8RZ5	51
8RZ10	29
8RZ25	30
8RZX3	N/A
8RZX10	N/A

Element Collapse Rating: 150 psid (10 bar) for standard elements
3000 psid (210 bar) for high collapse (ZX) versions

Flow Direction: Outside In

Element Nominal Dimensions: 2.18" (55 mm) O.D. x 8.15" (206 mm) long

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Type Fluid Appropriate Schroeder Media

Petroleum Based Fluids	All E media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
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
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) 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
CFX30
PLD

Skydrol® is a registered trademark of Solutia Inc.

Element Selection Based on Flow Rate

DF40
CF40
PF40
RFS50
RF60

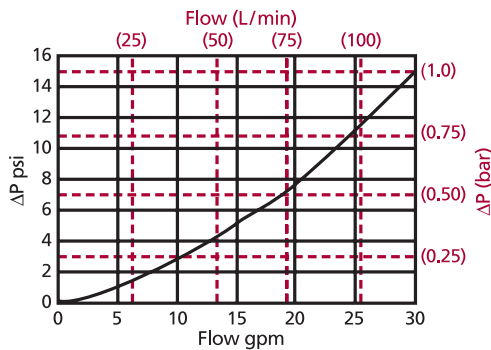
Pressure	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve.				
	Series	Part No.					
To 6000 psi (415 bar)	E Media	8R3	8R3		See CF60		
		8R10	8R10		See CF60		
	Z- Media®	8RZ1	8RZ1		See CF60		
		8RZ3	8RZ3		See CF60		
		8RZ5	8RZ5		See CF60		
		8RZ10	8RZ10				
		8RZ25					
Flow	gpm	0	10	15	20	25	30
	(L/min)	0	50	75	100	115	

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}

RF60 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):

8R3	.35
8R10	.30
8RZ1	.87
8RZ3	.43
8RZ5	.39
8RZ10	.36
8RZ25	.11
8RZX3	NA
8RZX10	NA

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

LW60
KF30
TF50
KF50
KC50
MKF50
KC65
NOF30-05
NOF50-760
FOF60-03
NMF30
RMF60
Cartridge Elements
HS60
MHS60
KFH50

Notes

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

Exercise:

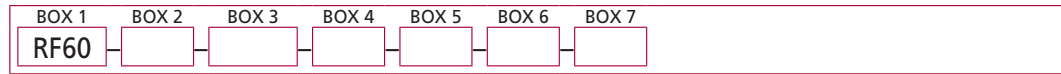
Determine ΔP at 15 gpm (57 L/min) for RF608R10SD5 using 200 SUS (44 cSt) fluid.

Solution:

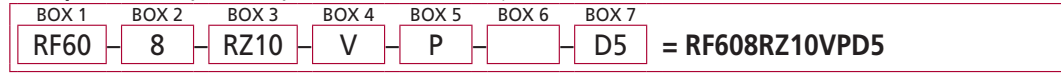
$$\begin{aligned} \Delta P_{\text{housing}} &= 5.0 \text{ psi } [.35 \text{ bar}] \\ \Delta P_{\text{element}} &= 15 \times .30 \times (200 \div 150) = 6.0 \text{ psi} \\ &\text{or} \\ &= [57 \times (.30 \div 54.9) \times (44 \div 32)] = .41 \text{ bar} \\ \Delta P_{\text{total}} &= 5.0 + 6.0 = 11.0 \text{ psi} \\ &\text{or} \\ &= [.38 + .41 = .79 \text{ bar}] \end{aligned}$$

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder RF60:



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



BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Element Length (in)	Element Size and Media	Seal Material
RF60	8	R3 = R size 3 μ E media (cellulose) R10 = R size 10 μ E media (cellulose) RZ1 = R size 1 μ Excellement® Z-Media® (synthetic) RZ3 = R size 3 μ Excellement® Z-Media® (synthetic) RZ5 = R size 5 μ Excellement® Z-Media® (synthetic) RZ10 = R size 10 μ Excellement® Z-Media® (synthetic) RZ25 = R size 25 μ Excellement® Z-Media® (synthetic) RZX3 = R size 3 μ Excellement® Z-Media® (high collapse center tube) RZX10 = R size 10 μ Excellement® Z-Media® (high collapse center tube)	Omit = Buna N H = EPR V = Viton®
RFN60 <small>(Non-bypassing: requires ZX high collapse elements)</small>			

BOX 5	BOX 7								
Inlet Port	Dirt Alarm® Options								
P = 1" NPTF S = SAE-16 F = 1" SAE 4-bolt flange Code 62 B = ISO 228 G-1"	Omit = None Visual = D5 = Visual pop-up Visual with Thermal Lockout = D8 = Visual w/ thermal lockout								
Options									
Omit = None X = Blocked bypass 50 = 50 psi bypass setting L = Two ¼" NPTF inlet and outlet female test ports U = Schroeder Check 7/16" -20 UNF Test Point installation in head (upstream)	<table border="1"> <tr> <td>Electrical</td> <td> 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 </td> </tr> <tr> <td>Electrical with Thermal Lockout</td> <td> 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 </td> </tr> <tr> <td>Electrical Visual</td> <td> MS13 = Supplied w/ threaded connector & light MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end) </td> </tr> <tr> <td>Electrical Visual with Thermal Lockout</td> <td> 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 </td> </tr> </table>	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
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NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Example: 8RZ1V 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.

Box 7. Standard indicator setting for non-bypassing model is 50 psi unless otherwise noted.