

# 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**



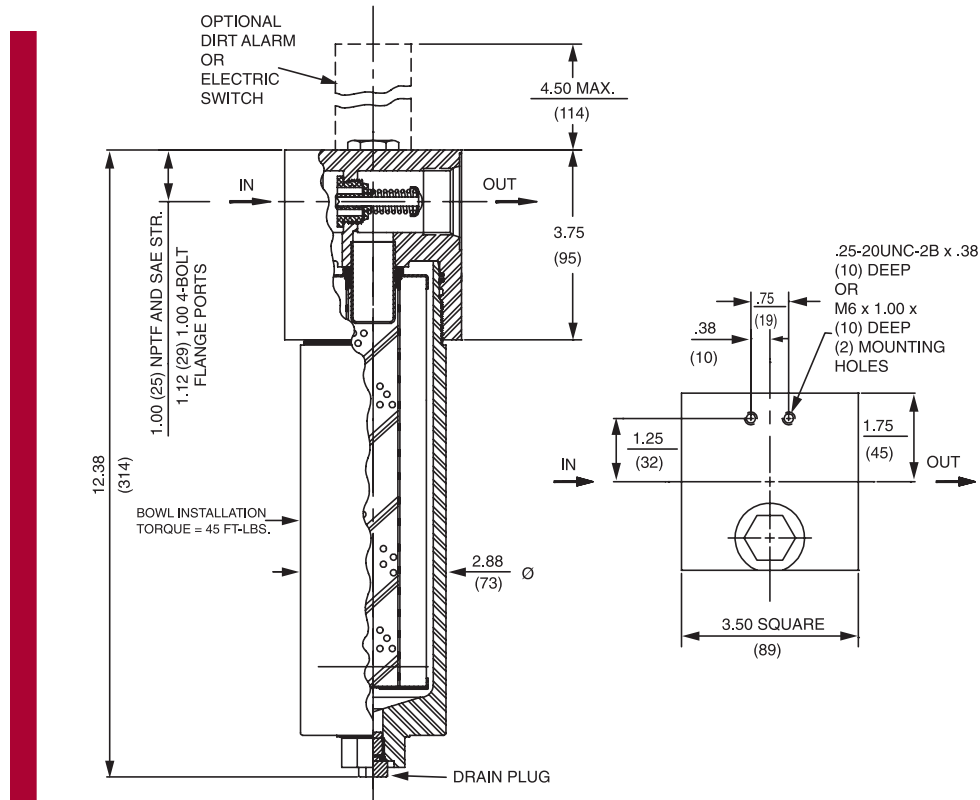
**CONSTRUCTION**

## 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

<b>Petroleum Based Fluids</b>	All E media (cellulose) and Z-Media® (synthetic)
<b>High Water Content</b>	All Z-Media® (synthetic)
<b>Invert Emulsions</b>	10 and 25 µ Z-Media® (synthetic)
<b>Water Glycols</b>	3, 5, 10 and 25 µ Z-Media® (synthetic)
<b>Phosphate Esters</b>	All Z-Media® (synthetic) with H (EPR) seal designation
<b>Skydrol®</b>	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**

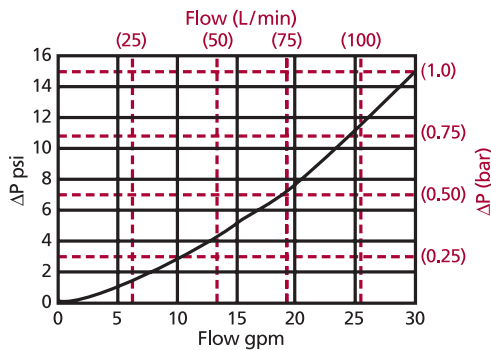
Pressure	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve.					
	Series	Part No.						
To 6000 psi (415 bar)	E Media	8R3	8R3			See CF60		
		8R10	8R10			See CF60		
	Z- Media®	8RZ1	8RZ1			See CF60		
		8RZ3	8RZ3			See CF60		
		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<sub>housing</sub>

RF60 ΔP<sub>housing</sub> 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<sub>element</sub>

ΔP<sub>element</sub> = 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:

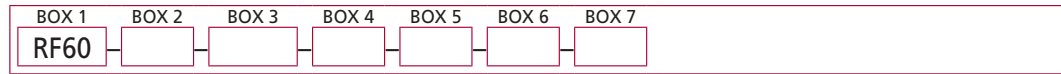
Determine ΔP at 15 gpm (57 L/min) for RF608R10SD5 using 200 SUS (44 cSt) fluid.

#### Solution:

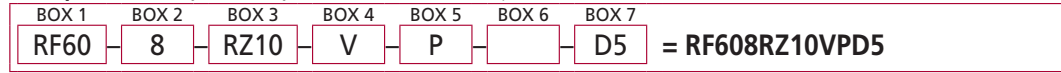
$$\begin{aligned} \Delta P_{\text{housing}} &= 5.0 \text{ psi } [.35 \text{ bar}] \\ \Delta P_{\text{element}} &= 15 \times .30 \times (200 \div 150) = 6.0 \text{ psi} \\ &\text{or} \\ &= [57 \times (.30 \div 54.9) \times (44 \div 32)] = .41 \text{ bar} \\ \Delta P_{\text{total}} &= 5.0 + 6.0 = 11.0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

## 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
<b>Filter Series</b>	<b>Element Length (in)</b>	<b>Element Size and Media</b>	<b>Seal Material</b>
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								
<b>Inlet Port</b>	<b>Dirt Alarm® Options</b>								
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								
<b>Options</b>									
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 &amp; light                              MS14 = Supplied w/ 5 pin Brad Harrison connector &amp; 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
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: 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.