

# Top-Ported Pressure Filter

## CF60



### Features and Benefits

- Top-ported high pressure filter
- Available with non-bypass option with high collapse element
- Offered in pipe, SAE straight thread, flange and ISO 228 porting
- No-Element indicator option available

**50 gpm**  
**190 L/min**  
**6000 psi**  
**415 bar**

NF30

NFS30

YF30

CFX30

PLD

CF40

DF40

PF40

RFS50

RF60

**CF60**

CTF60

VF60

LW60

KF30

KF50

TF50

KC50

MKF50

MKC50

KC65

HS60

MHS60

KFH50

LC60

LC35

LC50

NOF30-05

NOF-50-760

FOF60-03

NMF30

RMF60

14-CRZX10

20-CRZX10

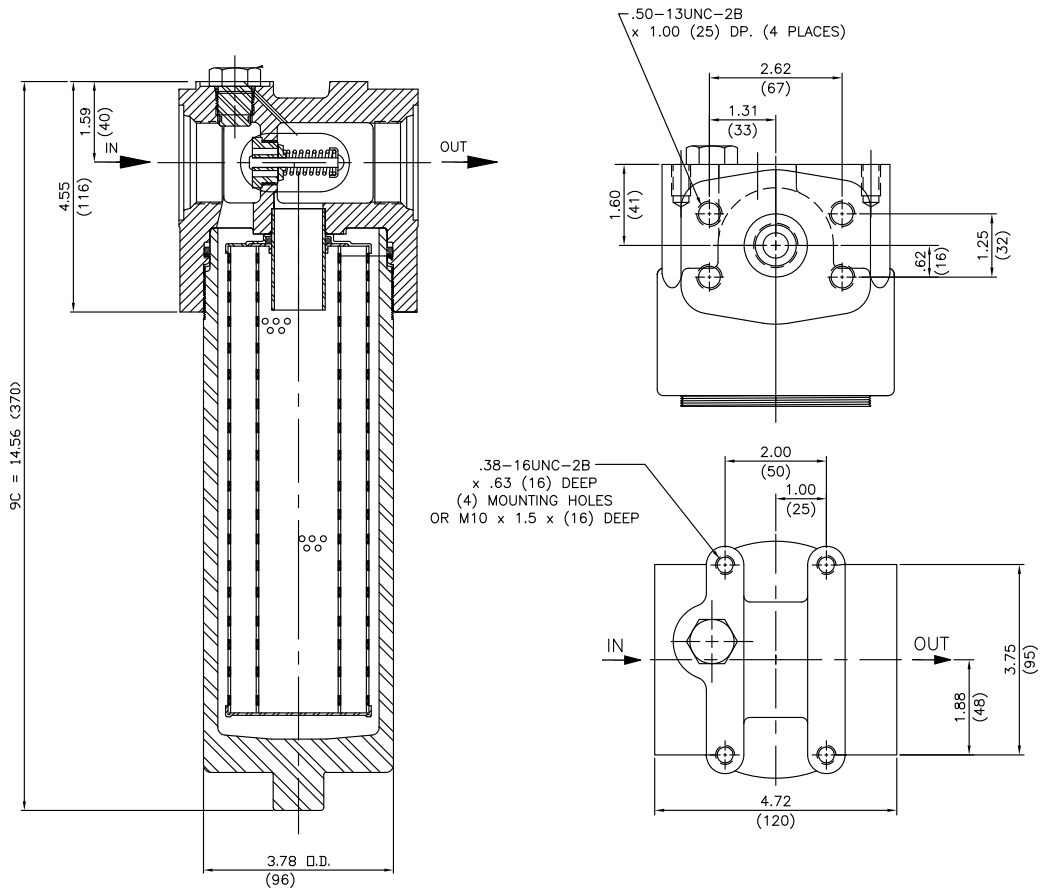
Model No. of filter in photograph is CF601CCZ3SD5.

Flow Rating:	Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	15,500 psi (1070 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	4000 psi (276 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: 75 psi (5.2 bar) Non-bypassing model has a blocked bypass.
Porting Head:	Ductile Iron
Element Case:	Steel
Weight of CF60-9C:	24.0 lbs. (10.9 kg)
Element Change Clearance:	4.0" (103 mm)

### Filter Housing Specifications

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



Metric dimensions in ( ).  
 Dimensions shown are inches (millimeters) for general information and overall envelope size only.  
 For complete dimensions please contact Schroeder Industries to request a certified print.

## 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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
CCZ1	<1.0	<1.0	<1.0	<4.0	4.2
CCZ3	<1.0	<1.0	<2.0	<4.0	4.8
CCZ5	2.5	3.0	4.0	4.8	6.3
CCZ10	7.4	8.2	10.0	8.0	10.0
CCZ25	18.0	20.0	22.5	19.0	24.0
CCZX3	<1.0	<1.0	<2.0	4.7	5.8

Element	DHC (gm)
CCZ1	57
CCZ3	58
CCZ5	63
CCZ10	62
CCZ25	63
CCZX3	26*

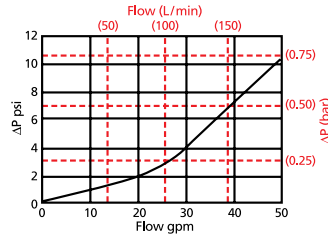
Element Collapse Rating: 150 psid (10 bar) for standard elements  
 3000 psid (210 bar) for high collapse (ZX) versions

Flow Direction: Outside In

Element Nominal Dimensions: CC: 3.0" (75 mm) O.D. x 9.5" (240 mm) long

### $\Delta P_{\text{housing}}$

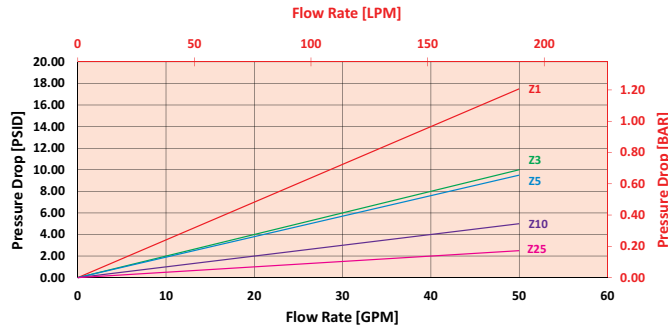
CF60  $\Delta P_{\text{housing}}$  for fluids with sp gr (specific gravity) = 0.86:



### $\Delta P_{\text{element}}$

CCZ

Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)



## Pressure Drop Information Based on Flow Rate and Viscosity

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

### Exercise:

Determine  $\Delta P_{\text{filter}}$  at 30 gpm (113.6 L/min) for CF601CCZ10SD5 using 175 SUS (37.2 cSt) fluid.

Use the housing pressure curve to determine  $\Delta P_{\text{housing}}$  at 30 gpm. In this case,  $\Delta P_{\text{housing}}$  is 4 psi (.28 bar) on the graph for the CF60 housing.

Use the element pressure curve to determine  $\Delta P_{\text{element}}$  at 30 gpm. In this case,  $\Delta P_{\text{element}}$  is 3 psi (.21 bar) according to the graph for the CCZ10 element.

Because the viscosity in this sample is 175 SUS (37.2 cSt), we determine the **Viscosity Factor ( $V_f$ )** 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,  $\Delta P_{\text{filter}}$ , is calculated by adding  $\Delta P_{\text{housing}}$  with the true element pressure differential, ( $\Delta P_{\text{element}} * V_f$ ). The  $\Delta P_{\text{element}}$  from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

### Solution:

$$\Delta P_{\text{housing}} = 4 \text{ psi } [.28 \text{ bar}] \quad | \quad \Delta P_{\text{element}} = 3 \text{ psi } [.21 \text{ bar}]$$

$$V_f = 175 \text{ SUS } (37.2 \text{ cSt}) / 150 \text{ SUS } (32 \text{ cSt}) = 1.2$$

$$\Delta P_{\text{filter}} = 4 \text{ psi } + (3 \text{ psi } * 1.2) = 7.6 \text{ psi}$$

OR

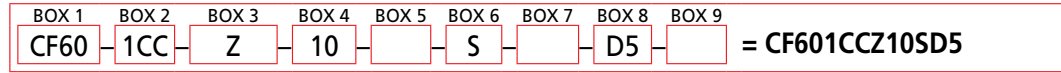
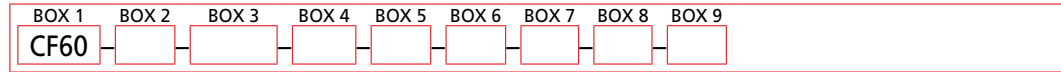
$$\Delta P_{\text{filter}} = .28 \text{ bar } + (.21 \text{ bar } * 1.2) = .53 \text{ bar}$$

Note:  
If your element is not graphed, use the following equation:  
 $\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$  Plug this variable into the overall pressure drop equation.

Ele.	$\Delta P$
CC3	0.22
CC10	0.13
CC25	0.03
CCAS3	0.20
CCAS5	0.19
CCAS10	0.10
CCZX3	0.29
CCZX10	0.26

## Filter Model Number Selection

### How to Build a Valid Model Number for a Schroeder CF60:



BOX 1	BOX 2	BOX 3
<b>Filter Series</b>	<b>Number and Size of Elements</b>	<b>Media Type</b>
CF60	1CC	Omit = E Media (cellulose)
CFN60 <small>(Non-bypassing: requires ZX high collapse elements)</small>		Z = Excellement® Z-Media® (synthetic)
		ZX = Excellement® Z-Media® (high collapse center tube)
		AS = Anti-Stat Media (synthetic)

BOX 4	
Micron Rating	
1	= 1 Micron (Z media)
3	= 3 Micron (AS, E, Z and ZX media)
5	= 5 Micron (AS, Z, and ZX media)
10	= 10 Micron (AS, E, Z, and ZX media)
25	= 25 Micron (E, Z and ZX media)

BOX 5
Seal Material
Omit = Buna N
V = Viton®
H = EPR
H.5 = Skydrol® compatibility

BOX 6
Porting
S = SAE-20
P = 1¼" NPTF
F = 1¼" SAE 4-bolt flange code 62
B = ISO 228 G-1¼"

BOX 7
Options
Omit = None
25 = 25 psi bypass setting
30 = 30 psi bypass setting
50 = 50 psi bypass setting
60 = 60 psi bypass setting
75 = 75 psi bypass setting

BOX 8	
Dirt Alarm® Options	
Omit = None	
Visual	D5 = Visual pop-up
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
Electrical with Thermal Lockout	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
Electrical Visual with Thermal Lockout	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)
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 identical to contents of Boxes 2, 3, 4 and 5. E media (cellulose) elements are only available with Buna N seals.

Box 5. 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 6. B porting option supplied with metric mounting holes.

Box 8. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.