# 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

Model No. of filter in photograph is CF601CCZ3SD5.

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



## Applications


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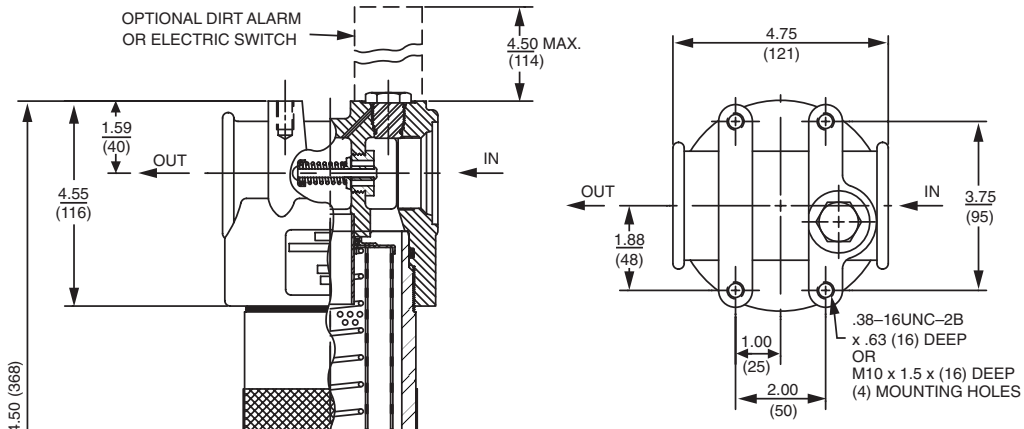
## Filter Housing Specifications

| | |
|---|---|
| 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) |
| 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)<br>Full Flow: 75 psi (5.2 bar)<br>Non-bypassing model has a blocked bypass. |
| Porting Head:<br>Element Case: | Ductile Iron<br>Steel |
| Weight of CF60-9C: | 24.0 lbs. (10.9 kg) |
| Element Change Clearance: | 4.0" (103 mm) |

# CF60 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 | |
|---|---|---|---|---|---|
| | $\beta_x \geq 75$ | $\beta_x \geq 100$ | $\beta_x \geq 200$ | $\beta_{x(c)} \geq 200$ | $\beta_{x(c)} \geq 1000$ |
| CC3 | 6.8 | 7.5 | 10.0 | N/A | N/A |
| CC10 | 15.5 | 16.2 | 18.0 | N/A | N/A |
| 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 |

## Dirt Holding Capacity

| Element | DHC (gm) |
|---|---|
| CC3 | 30 |
| CC10 | 25 |
| CCZ1 | 57 |
| CCZ3 | 58 |
| CCZ5 | 63 |
| CCZ10 | 62 |
| CCZ25 | 63 |
| CCZX3 | 26* |

*Based on 100 psi terminal pressure

**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

# Top-Ported Pressure Filter CF60

## Fluid Compatibility

| 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) |

Skydrol is a registered trademark of Solutia Inc.

## Element Selection
Based on Flow Rate

| Pressure | Element Series | Element Part No. | Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve. |
|---|---|---|---|
| To 6000 psi (415 bar) | E Media | CC3 | CC3 |
| | | CC10 | CC10 |
| | | CC25 | CC25 |
| | Z Media | CCZ1 | CCZ1 / See KC65 |
| | | CCZ3 | CCZ3 / See KC65 |
| | | CCZ5 | CCZ5 |
| | | CCZ10 | CCZ10 |
| | | CCZ25 | CCZ25 |
| | Flow | gpm | 0 10 20 30 40 50 |
| | | (L/min) | 0 50 100 150 190 |

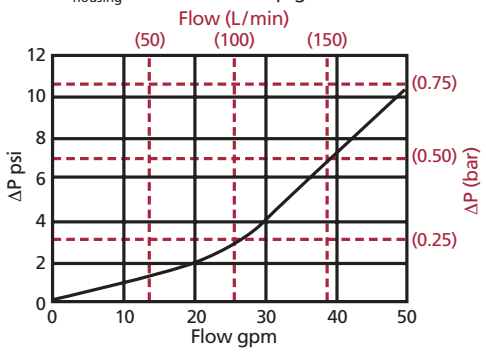
Shown above are the elements most commonly used in this housing.

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.*

## Pressure Drop Information
Based on Flow Rate and Viscosity

### $\Delta P_{housing}$

CF60 $\Delta P_{housing}$ for fluids with sp gr = 0.86:




sp gr = specific gravity

### $\Delta P_{element}$

$\Delta P_{element}$ = flow x element ΔP factor x viscosity factor

*El. ΔP factors @ 150 SUS (32 cSt):*

| | |
|---|---|
| **CC3** | .22 |
| **CC10** | .13 |
| **CC25** | .03 |
| **CCZ1** | .35 |
| **CCZ3** | .20 |
| **CCZ5** | .19 |
| **CCZ10** | .10 |
| **CCZ25** | .05 |
| **CCZX3** | .29 |
| **CCZX10** | .26 |

If working in units of bars & L/min, divide above factor by 54.9.

*Viscosity factor:* Divide viscosity by 150 SUS (32 cSt).

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

## Notes

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

**Exercise:**
Determine ΔP at 30 gpm (115 L/min) for CF601CCZ3SD5 using 200 SUS (44 cSt) fluid.

**Solution:**

$\Delta P_{housing}$ = 4.0 psi [.30 bar]

$\Delta P_{element}$ = 30 x .20 x (200÷150) = 8.0 psi
or
= [115 x (.20÷54.9) x (44÷32) = .58 bar]

$\Delta P_{total}$ = 7.0 + 7.2 = 14.2 psi
or
= [.30 + .58 = .88 bar]

# CF60 Top-Ported Pressure Filter

## Filter Model Number Selection

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

| BOX 1 | BOX 2 | BOX 3 | BOX 4 | BOX 5 | BOX 6 | BOX 7 | BOX 8 |
|---|---|---|---|---|---|---|---|
| CF60 | | | | | | | |

**Example:** *NOTE: One option per box*

| BOX 1 | BOX 2 | BOX 3 | BOX 4 | BOX 5 | BOX 6 | BOX 7 | BOX 8 | |
|---|---|---|---|---|---|---|---|---|
| CF60 | 1 | CCZ5 | | S | | D5 | | = CF601CCZ5SD5 |

BOX 1

| Filter Series |
|---|
| CF60 |
| CFN60 (Non-bypassing: requires ZX high collapse elements) |

BOX 2

| Number of Elements |
|---|
| 1 |

BOX 3

| Element Part Number | |
|---|---|
| CC Length | |
| CC3 | = 3 µ E media (cellulose) |
| CC10 | = 10 µ E media (cellulose) |
| CC25 | = 25 µ E media (cellulose) |
| CCZ1 | = 1 µ Excellement® Z media (synthetic) |
| CCZ3 | = 3 µ Excellement Z media (synthetic) |
| CCZ5 | = 5 µ Excellement Z media (synthetic) |
| CCZ10 | = 10 µ Excellement Z media (synthetic) |
| CCZ25 | = 25 µ Excellement Z media (synthetic) |
| CCZX3 | = 3 µ Excellement Z media (high collapse center tube) |
| CCZX10 | = 10 µ Excellement Z media (high collapse center tube) |
| CCZX25 | = 25 µ Excellement Z media (high collapse center tube) |

BOX 4

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

BOX 5

| Inlet Port |
|---|
| P = 1¼" NPTF |
| S = SAE-20 |
| F = 1¼" SAE 4-bolt flange Code 62 |
| B = ISO 228 G-1¼" |

BOX 6

| Options |
|---|
| Omit = None |
| 50 = 50 psi bypass setting |

BOX 7

| 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<br>MS5LC = Low current MS5<br>MS10 = Electrical w/ DIN connector (male end only)<br>MS10LC = Low current MS10<br>MS11 = Electrical w/ 12 ft. 4-conductor wire<br>MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only)<br>MS12LC = Low current MS12<br>MS16 = Electrical w/ weather-packed sealed connector<br>MS16LC = Low current MS16<br>MS17LC = Electrical w/ 4 pin Brad Harrison male connector |
| Electrical with Thermal Lockout | MS5T = MS5 (see above) w/ thermal lockout<br>MS5LCT = Low current MS5T<br>MS10T = MS10 (see above) w/ thermal lockout<br>MS10LCT = Low current MS10T<br>MS12T = MS12 (see above) w/ thermal lockout<br>MS12LCT = Low current MS12T<br>MS16T = MS16 (see above) w/ thermal lockout<br>MS16LCT = Low current MS16T<br>MS17LCT = Low current MS17T |
| Electrical Visual | MS13 = Supplied w/ threaded connector & light<br>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<br>MS13DCLCT = Low current MS13DCT<br>MS14DCT = MS14 (see above), direct current, w/ thermal lockout<br>MS14DCLCT = Low current MS14DCT |

BOX 8

| Additional Options |
|---|
| Omit = None |
| N = No-Element indicator |

NOTES:

Box 3. Replacement element part numbers are identical to contents of Boxes 3 and 4. E media (cellulose) elements are only available with Buna N seals.

Box 4. 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 5. B porting option supplied with metric mounting holes.

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

Box 8. N option should be used in conjunction with dirt alarm.