

Top-Ported Pressure Filter

CF40



Features and Benefits

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

Model No. of filter in photograph is CF401CC10SD5.



INDUSTRIAL



AUTOMOTIVE
MANUFACTURING



MACHINE
TOOL



STEEL
MAKING



MOBILE
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PULP & PAPER



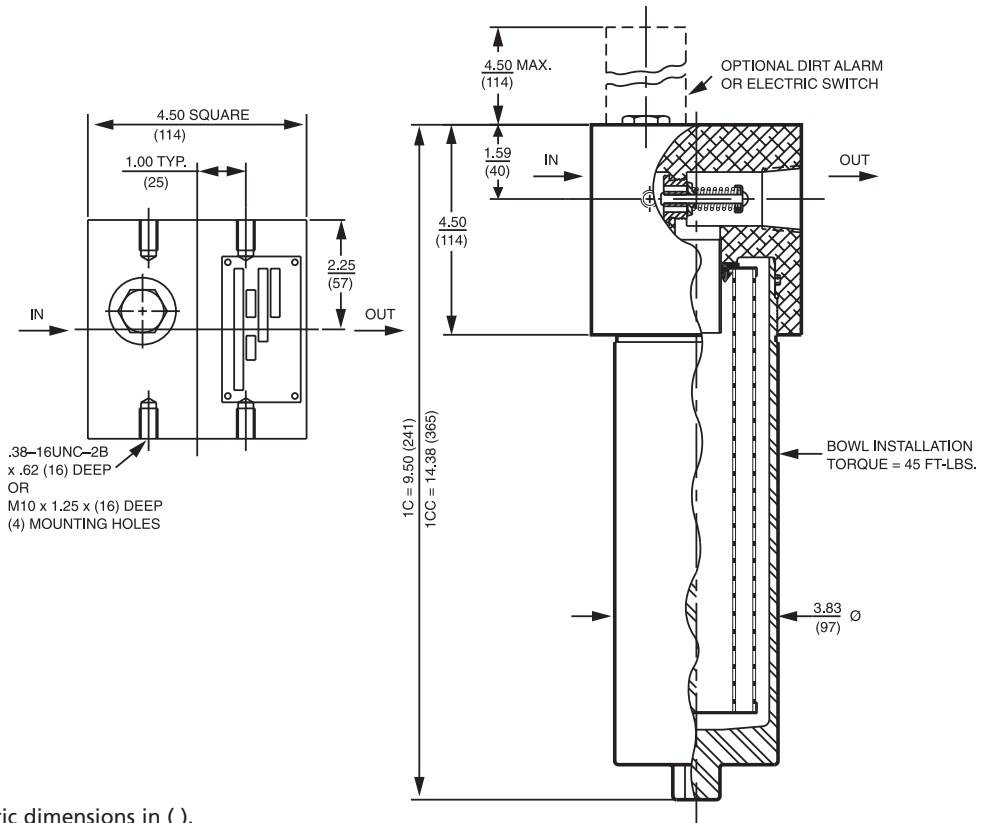
AGRICULTURE

Applications

- 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

Flow Rating:	Up to 45 gpm (170 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	4000 psi (275 bar)
Min. Yield Pressure:	12,000 psi (828 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	1800 psi (125 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: 72 psi (5.0 bar) Non-bypassing model has a blocked bypass.
Porting Head:	Aluminum
Element Case:	Steel
Weight of CF40-1C:	14.0 lbs. (6.4 kg)
Weight of CF40-1CC:	19.5 lbs. (8.9 kg)
Element Change Clearance:	4.00" (100 mm) for C elements 8.75" (219 mm) for CC elements

Filter Housing Specifications



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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
C3/CC3	6.8	7.5	10.0	N/A	N/A
C10/CC10	15.5	16.2	18.0	N/A	N/A
CZ1/CCZ1	<1.0	<1.0	<1.0	<4.0	4.2
CZ3/CCZ3/CAS3/CCAS3	<1.0	<1.0	<2.0	<4.0	4.8
CZ5/CCZ5/CAS5/CCAS5	2.5	3.0	4.0	4.8	6.3
CZ10/CCZ10/CAS10/CCAS10	7.4	8.2	10.0	8.0	10.0
CZ25/CCZ25	18.0	20.0	22.5	19.0	24.0
CCZX3	<1.0	<1.0	<2.0	4.7	5.8
CCZX10	7.4	8.2	10.0	8.0	9.8

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)
C3	14	CC3	30
C10	12	CC10	25
CZ1	25	CCZ1	57
CZ3/CAS3	26	CCZ3/CCAS3	58
CZ5/CAS5	30	CCZ5/CCAS5	63
CZ10/CAS5	28	CCZ10/CCAS10	62
CZ25	28	CCZ25	63
		CCZX3	26*
		CCZX10	28*

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

*Based on 100 psi terminal pressure

Flow Direction: Outside In

Element Nominal Dimensions: C: N 3.0" (75 mm) O.D. x 4.75" (120 mm) long
CC: 3.0" (75 mm) O.D. x 9.5" (240 mm) long

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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), 10 µ ASP Media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic) 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® (synthetic) 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

NF30
NFS30
YF30
CFX30
PLD
DF40

Skydrol® is a registered trademark of Solutia Inc.

Pressure	Series	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.					
		Part No.							
To 4000 psi (275 bar)	E Media	C3 & CC3	1C3	1CC3	See KF30				
		C10 & CC10	1C10	1CC10	See KF30				
		C25 & CC25	1C25	1CC25					
	Z- Media®	CZ1 & CCZ1	1CZ1	1CCZ1	See KF30				
		CZ3 & CCZ3	1CZ3	1CCZ3					
		CZ5 & CCZ5	1CZ5 & 1CCZ5						
		CZ10 & CCZ10	1CZ10 & 1CCZ10						
		CZ25 & CCZ25	1CZ25 & 1CCZ25						
	Flow	gpm	0	10	20	30	35	40	45
		(L/min)	0	50	100	150	170		

Element Selection Based on Flow Rate

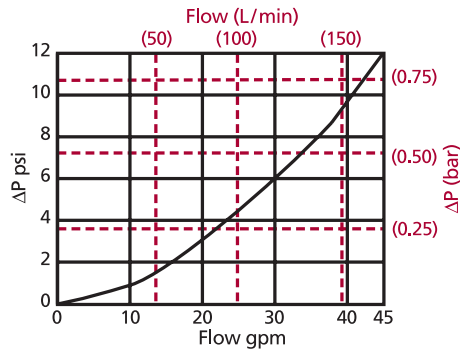
CF40
PF40
RFS50
RF60
CF60
CTF60
VF60
LW60

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}

CF40 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):

	1C	1CC
C3	.50	.22
C10	.19	.13
C25	.09	.03
CZ1	.70	.35
CZ3/CAS3	.50	.20
CZ5/CAS5	.32	.19
CZ10/CAS10	.25	.10
CZ25	.14	.05
		.29
		.26

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
MKF50
KC65
NOF30-05
NOF50-760
FOF60-03

Notes

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

Exercise:

Determine ΔP at 35 gpm (132 L/min) for CF401CC10SD5 using 200 SUS (44 cSt) fluid.

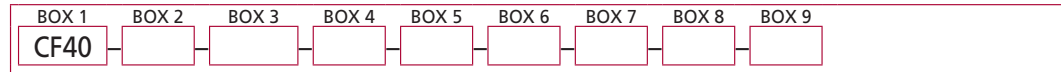
Solution:

$$\begin{aligned} \Delta P_{\text{housing}} &= 8.0 \text{ psi } [.50 \text{ bar}] \\ \Delta P_{\text{element}} &= 35 \times .13 \times (200 \div 150) = 6.0 \text{ psi} \\ &\text{or} \\ &= [132 \times (.13 \div 54.9) \times (44 \div 32)] = .42 \text{ bar} \\ \Delta P_{\text{total}} &= 8.0 + 6.0 = 14.0 \text{ psi} \\ &\text{or} \\ &= [.50 + .42 = .92 \text{ bar}] \end{aligned}$$

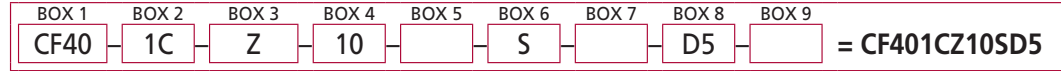
Cartridge Elements
HS60
MHS60
KFH50

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder CF40:



Example: NOTE: Only box 7 may contain more than one option



Filter Series	Number and Size of Elements	Media Type
CF40	C	Omit = E Media(Cellulose)
	D	Z = Excellement® Z-Media® (synthetic)
	CC	ZX = Excellement® Z-Media® (high collapse center tube)
CFN40 (Non-bypassing: requires ZX high collapse elements)		AS = Anti-Stat Media (synthetic)
		M = Media (reusable metal mesh) D size only

Micron Rating	Seal Material	Porting
1 = 1 Micron (Z, ZW, ZX media)	Omit = Buna N	S = SAE-20
3 = 3 Micron (AS, E, Z, ZW, ZX media)	V = Viton®	P = 1¼" NPTF
5 = 5 Micron (AS, Z, ZW, ZX media)	W = Buna N	B = ISO 228
10 = 10 Micron (AS, E, M, Z, ZW, ZX media)	H = EPR	G-1¼"
25 = 25 Micron (E & Z media®)	H.5 = Skydrol® compatibility	

Options	Dirt Alarm® Options
Omit = None	Omit = None
X = Blocked bypass	Visual D = Pointer D5 = Visual pop-up
50 = 50 psi bypass seating	Visual with Thermal Lockout D8 = Visual w/ thermal lockout
L = Two ¼" NPTF inlet and outlet female test points	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
U = Schroeder Check 7/16" - 20 UNF Test Point installation in cap (upstream)	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
Additional Options	Electrical Visual MS = Cam operated switch w/ ½" conduit female connection MS13 = Supplied w/ threaded connector & light MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)
Omit = None	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. For options H, V, W, and H.5, all aluminum parts are anodized. 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 7. Options X and 50 are not available with CFN40.

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

Box 9. N option is not available with CFN40. N option should be used in conjunction with dirt alarm.