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 CF401CC10SD.

45 gpm
170 L/min
4000 psi
275 bar

Applications


INDUSTRIAL


AUTOMOTIVE MANUFACTURING


MACHINE TOOL


MINING TECHNOLOGY


STEEL MAKING


PAPER INDUSTRY

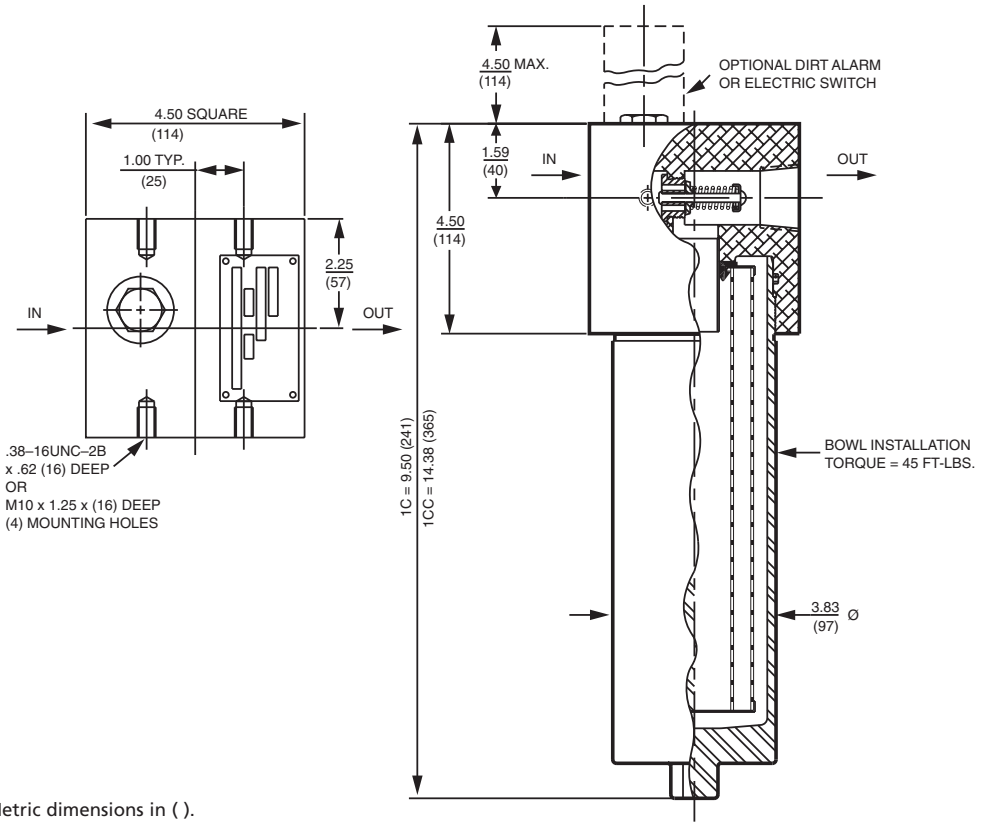

AGRICULTURE


MOBILE VEHICLES

Filter Housing Specifications

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)
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: Element Case:	Aluminum Steel
Weight of CF40-1C: Weight of CF40-1CC:	14.0 lbs. (6.4 kg) 19.5 lbs. (8.9 kg)
Element Change Clearance:	4.00" (100 mm) for C elements 8.75" (219 mm) for CC elements

CF40 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 $\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	Filtration Ratio wrt ISO 16889 Using APC calibrated per ISO 11171 $\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$
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	<1.0	<1.0	<2.0	<4.0	4.8
CZ5/CCZ5	2.5	3.0	4.0	4.8	6.3
CZ10/CCZ10	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	26	CCZ3	58
CZ5	30	CCZ5	63
CZ10	28	CCZ10	62
CZ25	28	CCZ25	63
		CCZX3	26*
		CCZX10	28*

*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: C: 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

Top-Ported Pressure Filter CF40

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	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 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

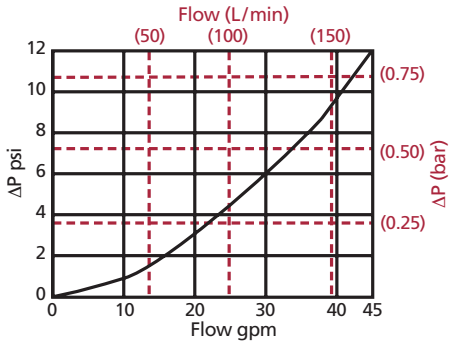
Shown above are the elements most commonly used in this housing.

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

$\Delta P_{housing}$

CF40 $\Delta P_{housing}$ 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):

	1C		1CC
C3	.50	CC3	.22
C10	.19	CC10	.13
C25	.09	CC25	.03
CZ1	.70	CCZ1	.35
CZ3	.50	CCZ3	.20
CZ5	.32	CCZ5	.19
CZ10	.25	CCZ10	.10
CZ25	.14	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 35 gpm (132 L/min) for CF401CC10SD5 using 200 SUS (44 cSt) fluid.

Solution:

$\Delta P_{housing}$ = 8.0 psi [.50 bar]

$\Delta P_{element}$ = 35 x .13 x (200÷150) = 6.0 psi
or
= [132 x (.13÷54.9) x (44÷32) = .42 bar]

ΔP_{total} = 8.0 + 6.0 = 14.0 psi
or
= [.50 + .42 = .92 bar]

CF40 Top-Ported Pressure Filter

Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
CF40	–	–	–	–	–	–	–

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
CF40 –	1 –	CZ5 –	–	S –	–	D5 –	–	= **CF401CZ5SD5**

BOX 1

Filter Series
CF40
CFN40 (Non-bypassing: requires ZX high collapse elements)

BOX 2

Number of Elements
1

BOX 3

Element Part Number		
C Length	CC Length	
C3	CC3	= 3 µ E media (cellulose)
C10	CC10	= 10 µ E media (cellulose)
C25	CC25	= 25 µ E media (cellulose)
CZ1	CCZ1	= 1 µ Excellement® Z media (synthetic)
CZ3	CCZ3	= 3 µ Excellement Z media (synthetic)
CZ5	CCZ5	= 5 µ Excellement Z media (synthetic)
CZ10	CCZ10	= 10 µ Excellement Z media (synthetic)
CZ25	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)
DM10		= 10 µ M media (reusable metal)
DM60		= 60 µ M media (reusable metal)

BOX 4

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

BOX 5

Inlet Port
P = 1¼" NPTF
S = SAE-20
B = ISO 228 G-1¼"

BOX 6

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)

BOX 7

Dirt Alarm® Options	
	Omit = None
Visual	D = Pointer 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 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	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)
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

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

Box 6. Options X and 50 are not available with CFN40.

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

Box 8. N option is not available with CFN40.
N option should be used in conjunction with dirt alarm.