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

45 gpm
170 L/min
4000 psi
275 bar

Model No. of filter in photograph is CF401CC10SD5.

Applications


INDUSTRIAL


AUTOMOTIVE MANUFACTURING


MACHINE TOOL


STEEL MAKING


MOBILE VEHICLES

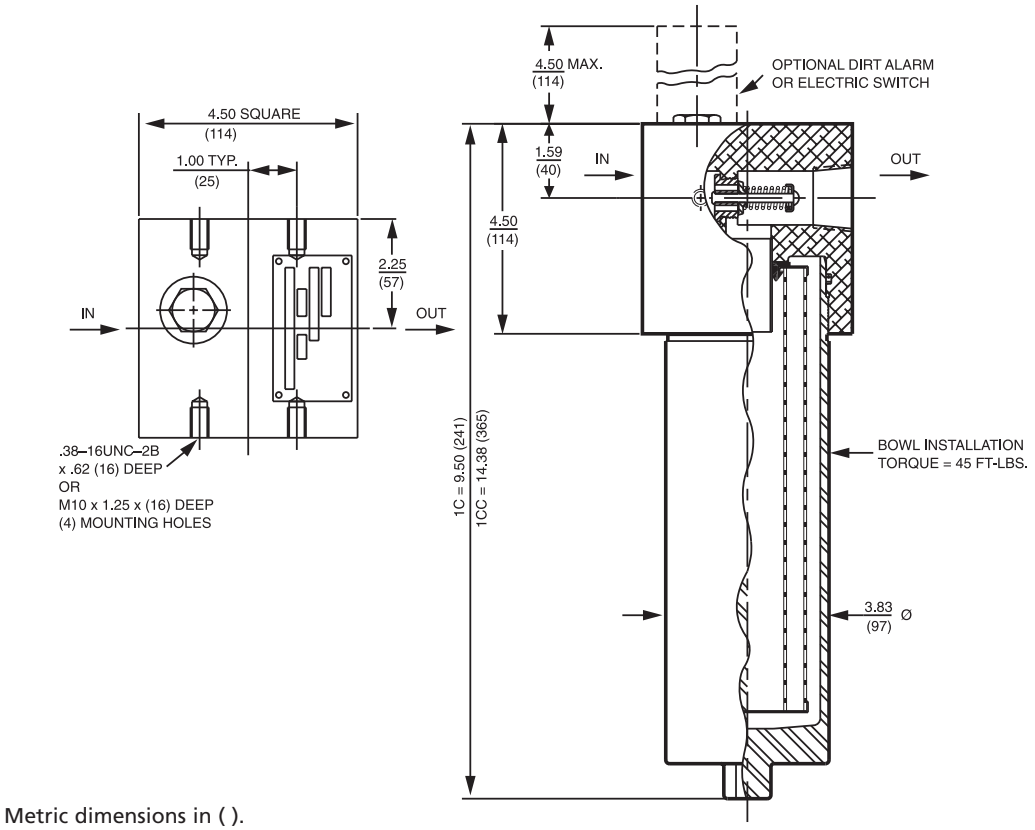

PULP & PAPER


AGRICULTURE

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), 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: 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			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*

*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: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

Top-Ported Pressure Filter CF40

Fluid Compatibility

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)

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

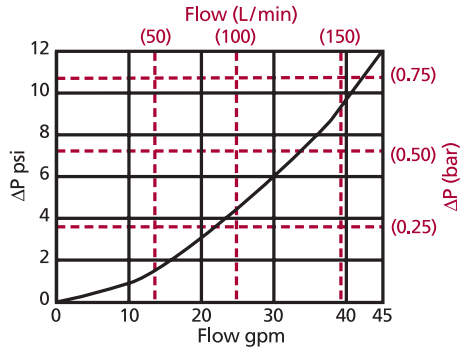
Shown above are the elements most commonly used in this housing.

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/CAS3	.50	**CCZ3/CCAS3**	.20
CZ5/CAS5	.32	**CCZ5/CCAS5**	.19
CZ10/CAS10	.25	**CCZ10/CCAS10**	.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	BOX 9
CF40								

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	
CF40	1C	Z	10		S		D5		= CF401CZ10SD5

BOX 1

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

BOX 2

Number and Size of Elements	
1	C
	D
	CC

BOX 3

Media Type	
Omit	E Media(Cellulose)
Z	= Excellement® Z-Media® (synthetic)
ZX	= Excellement® Z-Media® (high collapse center tube)
AS	= Anti-Stat Media (synthetic)
M	= Media (reusable metal mesh) D size only

BOX 4

Micron Rating		
1	= 1 Micron	(Z, ZW, ZX media)
3	= 3 Micron	(AS, E, Z, ZW, ZX media)
5	= 5 Micron	(AS, Z, ZW, ZX media)
10	= 10 Micron	(AS, E, M, Z, ZW, ZX media)
25	= 25 Micron	(E & Z media®)

BOX 5

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

BOX 6

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

BOX 7

Options	
Omit	= None
X	= Blocked bypass
50	= 50 psi bypass seeting
L	= Two ¼" NPTF inlet and outlet female test points
U	= Schroeder Check 7/16"-20 UNF Test Point installation in cap (upstream)

BOX 8

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 9

Additional Options	
Omit	= None
N	= No-Element Indicator (CF40 only)

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.