

SAME DAY SHIPMENT MODEL AVAILABLE!

Top-Ported Pressure Filter **DF40**



Features and Benefits

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

Model No. of filter in photograph is DF401CCZ10PD5.



INDUSTRIAL



AUTOMOTIVE
MANUFACTURING



MACHINE
TOOL



MINING
TECHNOLOGY



STEEL
MAKING



PAPER
INDUSTRY



AGRICULTURE



MOBILE
VEHICLES

30 gpm
115 L/min
4000 psi
275 bar

NF30

NFS30

YF30

DF40

CF40

CFX30

RF60

RFS50

CF60

VF60

Applications

KF30

TF50

KF50

KC50

KFH50

MKF50

KC65

FOF60-03

Filter Housing Specifications NOF30-05

NOF50-760

NMF30

RMF60

Cartridge Elements

Flow Rating: Up to 30 gpm (115 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)

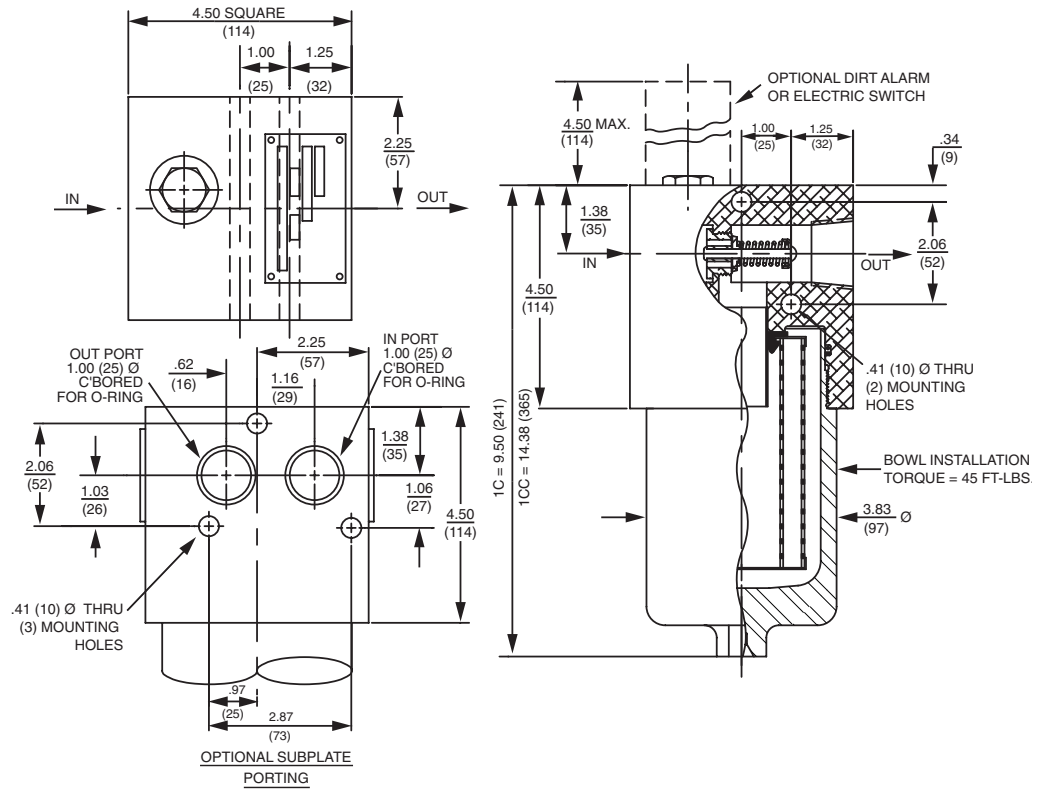
Bypass Setting: Cracking: 40 psi (2.8 bar)
Full Flow: 57 psi (3.9 bar)
Non-bypassing model has a blocked bypass.

Porting Head: Aluminum
Element Case: Steel

Weight of DF40-1C: 14.0 lbs. (6.4 kg)

Weight of DF40-1CC: 19.5 lbs. (8.9 kg)

Element Change Clearance: 4.0" (100 mm)



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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_{x(e)} \geq 200$	$\beta_{x(e)} \geq 1000$
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*

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

*Based on 100 psi terminal pressure

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)

Fluid Compatibility

NF30

NFS30

YF30

Skydrol is a registered trademark of Solutia Inc.

DF40

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.					
			0	10	15	20	25	30
To 4000 psi (275 bar)	E Media	C3 & CC3	1C3			1CC3		
		C10 & CC10	1C10			1CC10		
		C25 & CC25	1C25					
	Z Media	CZ1 & CCZ1	1CZ1		1CCZ1			
		CZ3 & CCZ3	1CZ3			1CCZ3		
		CZ5 & CCZ5	1CZ5 & 1CCZ5					
		CZ10 & CCZ10	1CZ10 & 1CCZ10					
		CZ25 & CCZ25	1CZ25 & 1CCZ25					
Flow	gpm (L/min)		0	10	15	20	25	30
			0	25	50	75	100	115

Element Selection

Based on Flow Rate

CF40

CFX30

RF60

RFS50

CF60

VF60

KF30

TF50

KF50

KC50

KFH50

MKF50

KC65

FOF60-03

NOF30-05

NOF50-760

NMF30

RMF60

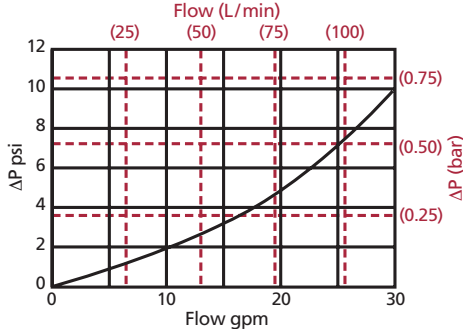
Cartridge Elements

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}

DF40 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	.50	.20
CZ5	.32	.19
CZ10	.25	.10
CZ25	.14	.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).

Pressure Drop Information

Based on Flow Rate and Viscosity

KFH50

MKF50

KC65

FOF60-03

NOF30-05

NOF50-760

NMF30

RMF60

Cartridge Elements

Notes

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

Exercise:

Determine ΔP at 20 gpm (75 L/min) for DF401CZ10PMS using 200 SUS (44 cSt) fluid.

Solution:

$$\Delta P_{\text{housing}} = 5.0 \text{ psi } [.35 \text{ bar}]$$

$$\begin{aligned} \Delta P_{\text{element}} &= 20 \times .25 \times (200 \div 150) = 6.6 \text{ psi} \\ &\text{or} \\ &= [75 \times (.25 \div 54.9) \times (44 \div 32)] = .46 \text{ bar} \end{aligned}$$

$$\begin{aligned} \Delta P_{\text{total}} &= 5.0 + 6.6 = 11.6 \text{ psi} \\ &\text{or} \\ &= [.35 + .46 = 11.7 \text{ bar}] \end{aligned}$$

Filter Model Number Selection

Same Day Shipment Model
See Appendix D for details.

How to Build a Valid Model Number for a Schroeder DF40:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
DF40							

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
DF40	1	CZ5		S		D5	

= DF401CZ5SD5

BOX 1	BOX 2	BOX 3	
Filter Series	Number of Elements	Element Part Number	
DF40	1	C Length	CC Length
DFN40 <small>(Non-bypassing: requires ZX high collapse elements)</small>		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 Excellence® Z media (synthetic)
		CZ3	CCZ3 = 3 μ Excellence Z media (synthetic)
		CZ5	CCZ5 = 5 μ Excellence Z media (synthetic)
		CZ10	CCZ10 = 10 μ Excellence Z media (synthetic)
		CZ25	CCZ25 = 25 μ Excellence Z media (synthetic)
		CCZX3	= 3 μ Excellence Z media (high collapse center tube)
		CCZX10	= 10 μ Excellence Z media (high collapse center tube)
		CCZX25	= 25 μ Excellence Z media (high collapse center tube)
		DM10	= 10 μ M media (reusable metal)
		DM60	= 60 μ M media (reusable metal)

BOX 4	BOX 5	BOX 6	BOX 7
Seal Material	Inlet Port	Options	Dirt Alarm® Options
Omit = Buna N	O = Manifold mounting	Omit = None	Omit = None
V = Viton®	P = 1" NPTF	X = Blocked bypass	D = Pointer
H = EPR	S = SAE-16	50 = 50 psi bypass setting	D5 = Visual pop-up
W = Buna N	B = ISO 228 G-1"	L = Two ¼" NPTF inlet and outlet female test ports	D8 = Visual w/ thermal lockout
H.5 = Skydrol® compatibility		U = Schroeder Check® 7/16"-20 UNF Test Point installation in head (upstream)	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. For option O, O-rings included for subplate option; fastening hardware not included.
 - Box 6. Options X and 50 are not available with DFN40.
 - Box 7. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.
 - Box 8. N option is not available with DFN40. N option should be used in conjunction with dirt alarm.