

HYDRAULIC LUBE FILTRATION

Products Catalog

High Pressure Filters

Element Technology

Section 3 High Pressure Filters Selection Guide

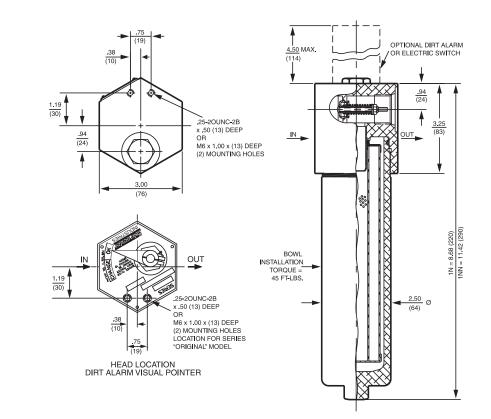
		Pressure psi (bar)	Flow gpm (L/min)	Element Length/Size	Page
	Top-Ported High Pressure Filters				
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	CFX30	3000 (210)	30 (115)	CC, DD	57
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- 00	TF50	5000 (345)	40 (150)	A, CC	101
(15	KC50	5000 (345)	100/150 (380/570)	K, KK, 27K	105
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High Pressure Filters (1500 - 6500 psi)	KC65	6500 (450)	100 (380)	K, KK, 27K	113
ress	Hydrostatic (Bidirectional) Flow High	Pressure Filters			
Ч Ч	HS60	6000 (415)	100 (380)	13HZ	117
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	In-Line Filters				
	LC60	6000 (415)	8 (30)	SSD	125
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	Servo Protection (Sandwich) Filters DO	07, DO3, Moog, Parl	ker & Vickers		
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	14-CRZX10	3000 (210)	6 (23)	—	147
	20-CRZX10	3000 (210)	12 (45)	_	148

Top-Ported Pressure FilterNF30

	 For the presence of t	20 gpm 75 L/min 3000 psi 210 bar CFX3 PL CF4 DF4 PF4 RF55 RF6 CF6 CF76 VF6 LW6 KF3	0 0 0 0 0 0 0 0 0 0 0
Model No. of filter in photograph	is NF301NZ10SD5.	KF5	
Elow Pating:	Up to 20 gpm (75 L/min) for 150 SUS (32 cSt) fluids	TF5	
Max. Operating Pressure:		Housing	0
	10,000 psi (690 bar), per NFPA T2.6.1	Specifications MKF5	0
Rated Fatigue Pressure:	2400 psi (165 bar), per NFPA T2.6.1	МКС5	0
	-20°F to 225°F (-29°C to 107°C)		
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 85 psi (5.9 bar) Non-bypassing model has a blocked bypass.	KC6 HS6	
Porting Head: Element Case:		MHS6	0
Weight of NF30-1N: Weight of NF30-1NN:	3.4 lbs. (1.5 kg)	KFH5	
Element Change Clearance:		LC6	0
		LC3	5
		LC5	
		NOF30-0	5
	oriate Schroeder Media	Fluid NOF-50-76	0
	edia (cellulose), Z-Media [®] and ASP [®] Media (synthetic) edia [®] and ASP [®] media (synthetic)	Compatibility FOF60-0	3
-	25 μ Z-Media [®] and 10 μ ASP [®] media (synthetic)	NMF3	0
	and 25 μ Z-Media [®] and 3, 5 and 10 μ ASP [®] Media (synthetic)		
		RMF6	
		14-CRZX1	0
		20-CRZX1	0

NF30

Top-Ported Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171	
Element	β _X ≥ 75	$\beta_X \ge 100$	$\beta_X \ge 200$	β _χ (c) ≥ 200	β _X (c) ≥ 1000
NZ1/NNZ1	<1.0	<1.0	<1.0	<4.0	4.2
NZ3/NNZ3	<1.0	<1.0	<2.0	<4.0	4.8
NZ5/NNZ5	2.5	3.0	4.0	4.8	6.3
NZ10/NNZ10	7.4	8.2	10.0	8.0	10.0
NZ25/NNZ25	18.0	20.0	22.5	19.0	24.0
NNZX3	<1.0	<1.0	<2.0	4.7	5.8
NNZX10	7.4	8.2	10.0	8.0	9.8

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)
NZ1	12	NNZ3	16
NZ3	12	NNZ5	18
NZ5	12	NNZ10	15
NZ10	11	NNZ25	15
NZ25	11	NNZX3	11*
NNZ1	15	NNZX10	13*

* 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

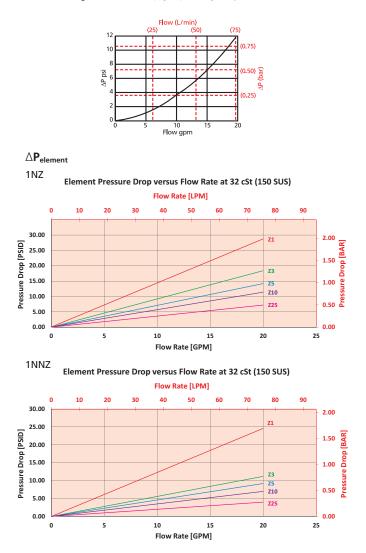
Element Nominal Dimensions: N: 1.75" (45 mm) O.D. x 5.25" (135 mm) long NN: 1.75" (45 mm) O.D. x 8.0" (200 mm) long

Element Performance Information & Dirt Holding Capacity

Top-Ported Pressure Filter NF3

$\Delta \mathbf{P}_{\mathsf{housing}}$

NF30 $\triangle \mathbf{P}_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



Pressure Drop Information **Based** on Flow Rate and Viscosity

Exercise:

Determine ΔP_{filter} at 15 gpm (57 L/min) for NF301NZ10SD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 15 gpm. In this case, $\Delta P_{\text{housing}}$ is 7 psi (.48 bar) according to the graph for an NF30 housing.

 $\triangle \mathbf{P}_{\text{filter}} = \triangle \mathbf{P}_{\text{housing}} + (\triangle \mathbf{P}_{\text{element}} * \mathsf{V}_f)$

Use the element pressure curve to determine $\Delta P_{element}$ at 15 gpm. In this, case, $\Delta P_{element}$ is 8 psi (.55 bar) according to the graph for an NZ10 element.

Because the viscosity in this sample is 160 SUS (34 cSt), we determine the Viscosity Factor (V_f) by dividing the Operating Fluid Viscosity with the Standard Viscosity of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, ΔP_{filter} , is calculated by adding $\Delta P_{\text{housing}}$ with the true element pressure differential, $(\Delta P_{element}^* \vee_f)$. The $\Delta P_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution: $\Delta \mathbf{P}_{\text{housing}} = 7 \text{ psi } [0.48 \text{ bar}] | \Delta \mathbf{P}_{\text{element}} = 8 \text{ psi } [0.55 \text{ bar}]$

V_f = 160 SUS (34 cSt) / 150 SUS (32 cSt) = 1.1

$$\Delta \mathbf{P}_{\text{filter}} = 7 \text{ psi} + (8 \text{ psi} * 1.1) = 15.8 \text{ psi}$$

OR

 $\Delta \mathbf{P}_{filter} = .48 \text{ bar} + (.55 \text{ bar} * 1.1) = 1.1 \text{ bar}$

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{element} = Flow Rate x \Delta \mathbf{P}_{f}$ Plug this variable into the overall pressure drop equation.

Ele.	$\triangle \mathbf{P}$
N3	1.10
N10	0.17
N25	0.10
NAS3	0.92
NAS5	0.71
NAS10	0.57

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NF30 Top-Ported Pressure Filter

Filter Model Number Selection	BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 NF30	BOX 6 BOX 7 BOX 8 BOX 9 BOX 6 BOX 7 BOX 8 BOX 9 S - D5 - D5 - S - NF301NZ10	SD5
	BOX 1 BOX 2	BOX 3	
	Filter Number & Size of Series Elements	Media Type	
	NF30 NFN30 (Non-bypassing: requires ZX high collapse elements)	Omit= E Media (Cellulose)Z= Excellement® Z-Media® (synthetic)AS= Anti-Stat Media (synthetic)ZX= Excellement® Z-Media® (high collapse center tM= Media (reusable metal mesh) N size only	:ube)
	BOX 4	BOX 5 BOX 6	BOX 7
	Micron Rating	Seal Porting Material	Options
	1 = 1 Micron (Z, ZX media) 3 = 3 Micron (AS, E, Z, ZX media) 5 = 5 Micron (AS, Z, ZX media) 10 = 10 Micron (AS, E, M, Z, ZX media) 25 = 25 Micron (E, Z, ZX media) 60 = 60 Micron (M media)	WaterialBOmit = Buna N $B = ISO228 \ G^{-\frac{3}{4}"}$ $V = Viton^{\oplus}$ $P = \frac{3}{4}"$ NPTF $W = Buna N$, $S = SAE-12$ AnodizedAluminumparts	Omit = None X = Blocked bypass (N/A with NFN30)
	BC	DX 8	BOX 9
	Dirt Alarn	n [®] Options Ac	ditional Options
	Omit = None D = Pointer Visual	C	0mit = None 792 = 7⁄16"-20
	D5 = Visual pop-up Visual with Thermal D8 = Visual w/ ther Lockout)	UNF drain on housing
	MS5LC = Low current M MS10 = Electrical w/ E MS10LC = Low current M MS11 = Electrical w/ 1 MS12 = Electrical w/ 5 MS12LC = Low current M MS16 = Electrical w/ v MS16LC = Low current M	DIN connector (male end only) AS10 2 ft. 4-conductor wire pin Brad Harrison connector (male end only) AS12 veather-packed sealed connector	
ent element pers are to contents 2, 3, 4 and 5. cellulose)	MS5T = MS5 (see aboElectricalwithThermalLockoutMS10T = MS10 (see abMS10LCT = Low current NMS12T = MS12 (see abMS12LCT = Low current NMS16T = MS16 (see abMS16LCT = Low current NMS16LCT = Low current NMS16LCT = Low current NMS16LCT = Low current NMS17LCT = Low current N	ve) w/ thermal lockout /S5T ove) w/ thermal lockout /S10T ove) w/ thermal lockout /S12T ove) w/ thermal lockout /S16T //S17T	
are only with Buna or options V		hreaded connector & light pin Brad Harrison connector & light (male end) ove), direct current, w/ thermal lockout	
aluminum anodized. a registered < of DuPont omers.	Visual withMS13DCLCT = Low current NThermalMS14DCT = MS14 (see abLockoutMS14DCLCT = Low current N	ove), direct current, w/ thermal lockout	

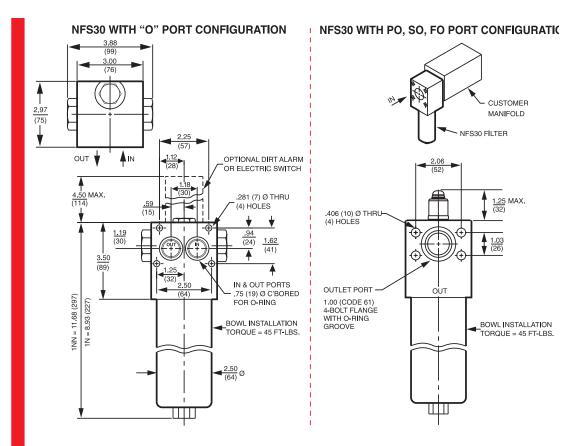
NOTES:

- Box 2. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5.
- Box 5. E media (cellulose) elements are only available with Buna N seals. For options V and W, all aluminum parts are anodized. Viton[®] is a registered trademark of DuPont Dow Elastomers.

Manifold Mounted Pressure Filter NFS30

Kodel No. of filter in photograp	<image/> <image/> <section-header><section-header><image/><image/></section-header></section-header>	20 gpm NF30 25 L/min NF30 3000 psi YF30 210 baar CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60 CF60 UW60 KF30 KF30 KF30 LW60 KF30 KF30 KF30 LW60 KF30 KF30 KF30 KF30 KF30 KF30 KF30 KF30 KF30 KF30 KF30
Flow Rating:	Up to 20 gpm (75 L/min) for 150 SUS (32 cSt) fluids	Filter KC50
Max. Operating Pressure:	3000 psi (210 bar)	Housing Specifications MKF50
Min. Yield Pressure: Rated Fatigue Pressure:	10,000 psi (690 bar), per NFPA T2.6.1 2400 psi (165 bar), per NFPA T2.6.1	Specifications
Temp. Range:	-20°F to 225°F (-29°C to 107°C)	MKC50
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 85 psi (5.9 bar)	КС65 НS60
Porting Head: Element Case:	Aluminum Aluminum	
Weight of NFS30-1N:	3.6 lbs. (1.6 kg)	MHS60
Weight of NFS30-1NN:	4.3 lbs. (2.0 kg)	KFH50
Element Change Clearance:	4.50" (115 mm)	LC60
		LC35
		LC50
		NOF30-05
	opriate Schroeder Media Media (cellulose), Z-Media [®] and ASP [®] Media (synthetic)	Compatibility
	Media® and ASP® media (synthetic)	FOF60-03
	nd 25 μ Z-Media® and 10 μ ASP® media (synthetic)	NMF30
Water Glycols 3, 5,	10 and 25 μ Z-Media® and 3, 5 and 10 μ ASP® Media (synthetic)	RMF60
		14-CRZX10
		20-CRZX10

NFS30 Manifold Mounted Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

	4	tration Ratio Per 572/NFPA T3.10.8 article counter (APC) cali	per ISC	on Ratio) 16889 _{Ited per} ISO 11171	
Element	$\beta_x \geq 75 \qquad \qquad \beta_x \geq 100 \qquad \qquad \beta_x \geq 200$		$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$	
NZ1/NNZ1	<1.0	<1.0	<1.0	<4.0	4.2
NZ3/NNZ3	<1.0	<1.0	<2.0	<4.0	4.8
NZ5/NNZ5	2.5	3.0	4.0	4.8	6.3
NZ10/NNZ10	7.4	8.2	10.0	8.0	10.0
NZ25/NNZ25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)
NZ1	12	NNZ1	15
NZ3	12	NNZ3	16
NZ5	12	NNZ5	18
NZ10	11	NNZ10	15
NZ25	11	NNZ25	15

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

Flow Direction: Outside In

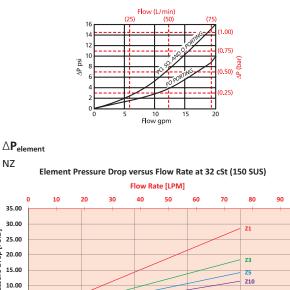
Element Nominal Dimensions: N: 1.75" (45 mm) O.D. x 5.25" (135 mm) long NN: 1.75" (45 mm) O.D. x 8.0" (200 mm) long

Element Performance Information & Dirt Holding Capacity

Manifold Mounted Pressure Filter INFS

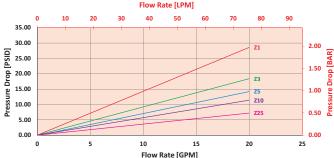
$\Delta \mathbf{P}_{\text{housing}}$

NFS30 $\triangle P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:

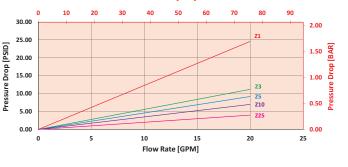


Pressure Drop Information Based on Flow Rate and Viscosity









 $\triangle \mathbf{P}_{\text{filter}} = \triangle \mathbf{P}_{\text{housing}} + (\triangle \mathbf{P}_{\text{element}} * \mathsf{V}_f)$

Exercise:

Determine $\Delta \mathbf{P}_{\text{filter}}$ at 15 gpm (57 L/min) for NFS301NZ10SO using 175 SUS (37.2 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 15 gpm. In this case, $\Delta P_{\text{housing}}$ is 10 psi (.69 bar) on the graph for the NFS30 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 15 gpm. In this case, $\Delta P_{element}$ is 8 psi (.55 bar) according to the graph for the NZ10 element.

Because the viscosity in this sample is 175 SUS (37.2 cSt), we determine the Viscosity Factor (V.) by dividing the Operating Fluid Viscosity with the Standard Viscosity of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, ΔP_{filter} , is calculated by adding $\Delta P_{\text{housing}}$ with the true element pressure differential, $(\Delta \mathbf{P}_{element} * V_f)$. The $\Delta \mathbf{P}_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

OR

 $\Delta \mathbf{P}_{\text{housing}} = 10 \text{ psi} [.69 \text{ bar}] | \Delta \mathbf{P}_{\text{element}} = 8 \text{ psi} [.55 \text{ bar}]$

V_f = 175 SUS (37.2 cSt) / 150 SUS (32 cSt) = 1.2 △P_{filter} = 10 psi + (8 psi * 1.2) = 19.6 psi

△P_{filter} = .69 bar + (.55 bar * 1.2) = 1.35 bar

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{element} = Flow Rate x \Delta \mathbf{P}_{f}$ Plug this variable into the overall pressure drop equation.

Ele.	$\Delta \mathbf{P}$	Ele.	$\triangle \mathbf{P}$
N3	1.10	NN3	0.77
N10	0.17	NN10	0.13
N25	0.10	NN25	0.07
NAS3	0.92	NNAS3	0.56
NAS5	0.71	NNAS5	0.46
NAS10	0.57	NNAS10	0.35

NFS30

Manifold Mounted Pressure Filter

Filter Model Number Selection

BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 BOX 7 BOX 8 NFS30						
BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 BOX 7 BOX 8 NFS30 - 1N - Z - 10 - SO - D = NFS301NZ10SOD						
BOX 1 BOX 2 BOX 3						
Filter Series	Number & Size of Elements	Media Type				
NFS30	N = Single Length NN = Double Length	Omit = E Media (Cellulose) Z = Excellement [®] Z-Media [®] (synthetic)				
NFSN30 AS = Anti-Stat Media (synthetic)						
(Non-bypassing: requires ZX high collapse elements)	$ZX = Excellement^{ R} Z-Media^{ (high collapse center tube) M = Media (reusable metal mesh) N size only $					

BOX 4	BOX 5	BOX 6	BOX 7
Micron Rating	Seal Material	Porting	Options
1 = 1 Micron (Z, ZX media)	Omit = Buna N	SO = SAE-12	Omit = None
3 = 3 Micron (AS,E, Z, ZX media)	V = Viton®	$PO = \frac{3}{4}$ " NPTF	X = Blocked
5 = 5 Micron (AS, Z, ZX media)	W = Buna N,	FO = 1" SAE 4-bolt	bypass (N/A
10 = 10 Micron (AS,E,M, Z, ZX media)	Anodized	flange Code 61	with
25 = 25 Micron (E, Z, ZX media)	Aluminum	O = Manifold	NFSN30)
60 = 60 Micron (M media)	parts		

BOX 8

		Dirt Alarm [®] Options
	Omit = N	one
Visual	D = Pc	pinter
tisaai	D5 = Vi	sual pop-up
Visual with		
Thermal	D8 = Vi	sual w/ thermal lockout
Lockout		
		ectrical w/ 12 in. 18 gauge 4-conductor cable
		ow current MS5
		ectrical w/ DIN connector (male end only) w current MS10
		ectrical w/ 12 ft. 4-conductor wire
Electrical		ectrical w/ 5 pin Brad Harrison connector (male end only)
		w current MS12
		ectrical w/ weather-packed sealed connector
		w current MS16
		ectrical w/ 4 pin Brad Harrison male connector
		S5 (see above) w/ thermal lockout
		ow current MS5T
		IS10 (see above) w/ thermal lockout
Electrical		ow current MS10T
with	MS12T = M	S12 (see above) w/ thermal lockout
Thermal Lockout	MS12LCT = Lo	ow current MS12T
LOCKOUL	MS16T = M	S16 (see above) w/ thermal lockout
	MS16LCT = Lo	ow current MS16T
	MS17LCT = Lo	ow current MS17T
Electrical	MS13 = Su	upplied w/ threaded connector & light
Visual	MS14 = Su	upplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical	MS13DCT = M	S13 (see above), direct current, w/ thermal lockout
Visual with	MS13DCLCT = Lo	ow current MS13DCT
Thermal	MS14DCT = M	S14 (see above), direct current, w/ thermal lockout
Lockout	MS14DCLCT = Lo	w current MS14DCT

NOTES:

- Box 2. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5.
- Box 5. E media (cellulose) elements are only available with Buna N seals. For options V and W, all aluminum parts are anodized. Viton® is a registered trademark of DuPont Dow Elastomers.
- Box 6. For option O, O-rings included; fastening hardware not included.
- Box 8. For options SO, PO and FO, available dirt alarm is D only.

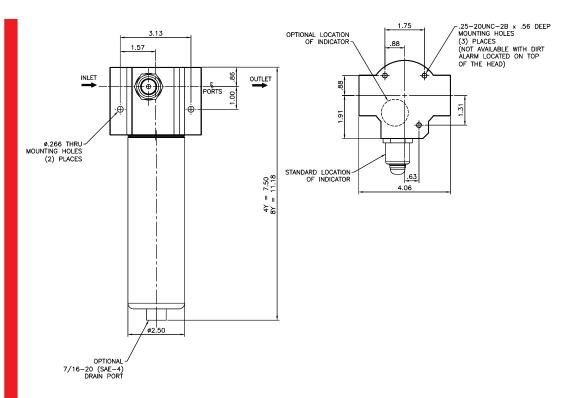
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Top-Ported Pressure FilterYF30

Image: Nodel No. of filter in photograph is Nodel No.	<section-header><section-header><section-header><section-header><section-header><section-header><section-header><list-item><list-item><list-item><section-header></section-header></list-item></list-item></list-item></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	25 gpm <u>100 L/min</u> 3000 psi 210 bar	NF30 NFS30 YF30 CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60 CF60 CF60 VF60 LW60 KF30 KF50
Elaus Dational	Un to 25 mms (100 L/min) for 150 SUS (22 oSt) fluids	Filter	KC50
Flow Rating: Max. Operating Pressure:	Up to 25 gpm (100 L/min) for 150 SUS (32 cSt) fluids 3000 psi (210 bar)	Housing	MKF50
Min. Yield Pressure:	10,000 psi (690 bar), per NFPA T2.6.1	Specifications	МКС50
Rated Fatigue Pressure:	1800 psi (124 bar), per NFPA T2.6.1-2005		
Temp. Range:	-20°F to 225°F (-29°C to 107°C)		KC65
Bypass Setting:	Cracking: 50 psi (3.4 bar) Non-bypassing model has a blocked bypass.		HS60
Porting Head: Element Case:	Aluminum Aluminum		MHS60
Weight of YF30-4Y: Weight of YF30-8Y:	3.75 lbs. (1.70 kg) 4.25 lbs. (1.93 kg)		KFH50
Element Change Clearance:	4.50" (115 mm)		LC60
		•	LC35
			LC50
		Ν	IOF30-05
Type Fluid Appropria			F-50-760
Petroleum Based Fluids All E Media		Compatibility	FOF60-03
High Water Content All Z-Media	-		
Invert Emulsions 10 and 25 Water Glycols 3, 5, 10 and	-		NMF30
			RMF60
		14	-CRZX10
		20)-CRZX10

F30

Top-Ported Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

		tio Per ISO 4572/N article counter (APC) ca		o per ISO 16889 Ited per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_{x}(\textbf{c})\geq 200$	$\beta_{x}(c) \geq 1000$	
4YZ1/8YZ1	<1.0	<1.0	<1.0	<4.0	4.2
4YZ3/8YZ3	<1.0	<1.0	<2.0	<4.0	4.8
4YZ5/8YZ5	2.5	3.0	4.0	4.8	6.3
4YZ10/8YZ10	7.4	8.2	10.0	8.0	10.0
4YZ25/8YZ25	18.0	20.0	22.5	19.0	24.0
4YZX5/8YZX5	2.5	3.0	4.0	5.6	7.2
4YZX10/8YZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)
4YZ1	6.3	8YZ1	12.1
4YZ3	5.1	8YZ3	9.9
4YZ5	6.4	8YZ5	12.4
4YZ10	5.4	8YZ10	10.5
4YZ25	4.9	8YZ25	9.4
4YZX5	4.3	8YZX5	8.9
4YZX10	4.3	8YZX10	8.9

Flow Direction: Outside In

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

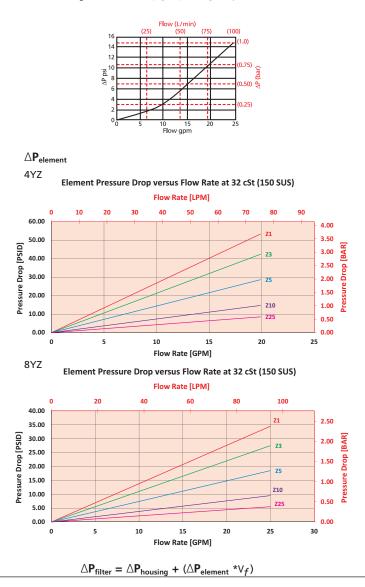
 Element Nominal Dimensions:
 4Y:
 1.77" (45 mm) O.D. x 4.50" (114 mm) long

 8Y:
 1.77" (45 mm) O.D. x 8.21" (209 mm) long

Top-Ported Pressure Filter YF3

$\Delta \mathbf{P}_{\text{housing}}$

YF30 $\triangle \mathbf{P}_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



Pressure Drop Information Based on Flow Rate and Viscosity

Exercise:

Determine $\Delta \mathbf{P}_{\text{filter}}$ at 10 gpm (37.9 L/min) for YF304YZ10WSDRD5 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 10 gpm. In this case, $\Delta P_{\text{housing}}$ is 3 psi (.21 bar) on the graph for the YF30 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 10 gpm. In this case, $\Delta P_{element}$ is 8 psi (.55 bar) according to the graph for the 4YZ10 element.

Because the viscosity in this sample is 200 SUS (42.6 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\triangle \mathbf{P}_{\text{filter}}$, is calculated by adding $\triangle \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\triangle \mathbf{P}_{\text{element}} * V_f$). The $\triangle \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 3 \text{ psi } [.21 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 8 \text{ psi } [.55 \text{ bar}]$

 $V_f = 200 \text{ SUS } (42.6 \text{ cSt}) / 150 \text{ SUS } (32 \text{ cSt}) = 1.3$ $\Delta \mathbf{P}_{\text{filter}} = 3 \text{ psi} + (8 \text{ psi} * 1.3) = 13.4 \text{ psi}$

△P_{filter} = .21 bar + (.55 bar * 1.3) = .93 bar

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{element} = Flow Rate x \Delta \mathbf{P}_{f}$. Plug this variable into the overall pressure drop equation.

Ele.	$\Delta \mathbf{P}$	Ele.	$\triangle \mathbf{P}$
4YZX5	1.65	8YZX5	0.92
4YZX10	0.09	8YZX10	0.63

YF30 Top-ported Pressure Filter

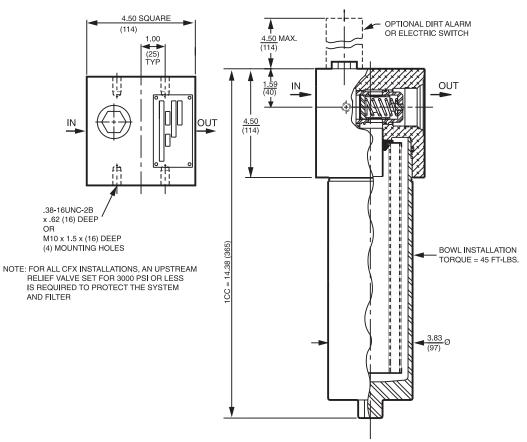
Filter How Model Number YF3		X 2 BOX 3	BOX 4	BOX 5 BO	X 6 BOX 7 BO)	(8		
BOX YF3				BOX 5 BO	х 6 вох 7 во) – DR – D		Z10WSDRD5	
вох		BOX 2			BOX 3		BOX 4	BOX 5
Filt	<u> </u>	Element Length (in)		Elemer	nt Size and Me	dia	Seal Material	Inlet Po
		4	YZ1	= Y size 1 µ E	xcellement [®] Z-Me	edia [®] (synthetic)	Omit = Buna N	S = SAE-
YF3	50	8	YZ3	= Y size 3 µ E	xcellement [®] Z-Me	edia [®] (synthetic)	V = Viton®	O = Subp
	20		YZ5	= Y size 5 µ E	xcellement [®] Z-Me	edia $^{ extbf{R}}$ (synthetic)	W = Buna N,	(cont facto
YFN (Nor	1-				Excellement [®] Z-M		Anodized	lucto
bypass require					Excellement [®] Z-M		Aluminum parts	
high col eleme			YZX5		xcellement [®] Z-Me	edia [®]	puris	
					se center tube)	۵		
			YZX10		Excellement [®] Z-N se center tube)	1edia ^w		
В	OX 6	BC	X 7			BOX 8		
	Alarm [®] cation	Opti	ional Drain		D	irt Alarm [®] Opti	ons	
	= Side o	_			Omit = 1	None		
	filter		drain	Visual	D5 = \	∕isual pop-up		
	head		Drain	Visual				
T	= Top of filter			with Thermal	D8 = \	/isual w/ thermal l	ockout	
	head			Lockout				
					MS5 = 1	Electrical w/ 12 in.	18 gauge 4-conducto	r cable
						ow current MS5		
					MS10 =	Electrical w/ DIN co male end only)	onnector	
						Low current MS10		
						Electrical w/ 12 ft.	4-conductor wire	
				Electrical	N/642	Electrical w/ 5 pin I	Brad Harrison connect	or
					MS12 = 0	male end only)		
						ow current MS12		
							er-packed sealed conr	nector
						Low current MS16		nnector
						VS5 (see above) w	Brad Harrison male co // thermal lockout	mectur
						Low current MS5T	, alemanockout	
							w/ thermal lockout	
				Electrical	MS10LCT = I	Low current MS10	Т	
				with Thermal	MS12T = 1	MS12 (see above)	w/ thermal lockout	
ement				Lockout		ow current MS12		
re Boxes							w/ thermal lockout	
						Low current MS16		
/						Low current MS17		
' and W,				Electrical			led connector & light Brad Harrison connecto	r & light
arts are n® is a				Visual	MS14DC = C	male end)	Brad Harrison connecto	n a light
mark of						MS13 (see above),		
stomers.				Electrical	1	w/ thermal lockout		
itor				Visual with		ow current MS13		
on-				Thermal	MS14DCT =	VIS14 (see above), w/ thermal lockout	direct current,	
				Lockout				

Non-Bypassing Pressure Filter CFX30

<image/>	 5000000000000000000000000000000000000	30 gpm <u>115 L/min</u> 3000 psi 210 bar	YF30 CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60 CTF60 VF60
Flow Rating:	Up to 30 gpm (115 L/min) for 150 SUS (32 cSt) fluids	Filter	LW60
Max. Operating Pressure:	3000 psi (210 bar)	Housing Specifications	KF30
Min. Yield Pressure:	12,000 psi (828 bar), per NFPA T2.6.1	specifications	KF50
Rated Fatigue Pressure: Temp. Range:	1800 psi (125 bar), per NFPA T2.6.1-2005 -20°F to 225°F (-29°C to 107°C)		TF50
Bypass Setting:	Non-Bypassing		
Porting Head:	Aluminum		KC50
Element Case: Weight of CFX30-1CC:	Steel 19.5 lbs. (8.9 kg)		MKF50
Element Change Clearance:	4.00" (100 mm)		МКС50
High Water Content All Z-Media® a	Ilulose), Z-Media [®] and ASP [®] Media (synthetic) nd ASP [®] media (synthetic)	Fluid Compatibility	KC65 HS60 MHS60
	Media [®] and 10 μ ASP [®] media (synthetic) 5 μ Z-Media [®] and 3, 5 and 10 μ ASP [®] Media (synthetic)		KFH50
-	nd ASP [®] media (synthetic) with H (EPR) seal designation		
. Skydrol [®] 3, 5, 10 and 2	5 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and		LC60
stainless steel v	vire mesh in element, and light oil coating on housing exterior)		LC35
valve that maintains the differential pressu	filter that incorporates the use of a unique pressure drop limiting re across the element below the element's collapse pressure rating. are drop increases across the element and, therefore, across the spool	Unique Non- Bypassing	LC50 NOF30-05
to move, restricting flow as needed	Pressure drop limiting valve	Filtration: NO)F-50-760
to prevent the pressure drop from increasing further and compromising element integrity. This design allows the CEV20 filteer to sofely use the lower		A Better Way	FOF60-03
the CFX30 filters to safely use the lower cost standard elements, eliminating		Require	NMF30
the need for expensive high-crush replacement elements.	Bias spring (prox. 50 psi)	High Crush Elements	RMF60
		14	4-CRZX10
	Element	20	0-CRZX10



Non-Bypassing Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

Element Performance Information & Dirt Holding Capacity

	4	Itration Ratio Per I 1572/NFPA T3.10.8. Particle counter (APC) cali	per ISC	on Ratio D 16889 ated per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x \geq 200$	$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$
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

Element	DHC (gm)	
CCZ1	57	
CCZ3	58	
CCZ5	63	
CCZ10	62	
CCZ25	63	

Element Collapse Rating: 150 psid (10 bar) for standard elements Flow Direction: Outside In Element Nominal CC: 3.0" (75 mm) O.D. x 9.5" (240 mm) long Dimensions:

58 SCHROEDER INDUSTRIES

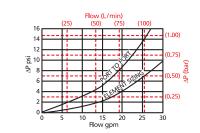
Non-Bypassing Pressure Filter **CFX3**

0.80



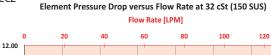
$\Delta \mathbf{P}_{\mathsf{housing}}$

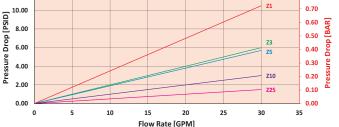
CFX30 $\triangle P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:











Pressure Drop Information Based on Flow Rate and Viscosity

 $\triangle \mathbf{P}_{\text{filter}} = \triangle \mathbf{P}_{\text{housing}} + (\triangle \mathbf{P}_{\text{element}} * \mathsf{V}_f)$

Exercise:

Determine $\Delta \mathbf{P}_{\text{filter}}$ at 15 gpm (57 L/min) for CFX301CZ5SD5 using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 15 gpm. In this case, $\Delta P_{\text{housing}}$ is 5 psi (.34 bar) on the graph for the CFX30 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 15 gpm. In this case, $\Delta P_{element}$ is 3 psi (.21 bar) according to the graph for the CZ5 element.

Because the viscosity in this sample is 100 SUS (21.3 cSt), we determine the Viscosity Factor (V_f) by dividing the Operating Fluid Viscosity with the Standard Viscosity of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, ΔP_{filter} , is calculated by adding $\Delta P_{\text{housing}}$ with the true element pressure differential, $(\Delta \mathbf{P}_{element} * V_f)$. The $\Delta \mathbf{P}_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 5 \text{ psi } [.34 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 3 \text{ psi } [.21 \text{ bar}]$

V_f = 100 SUS (21.3 cSt) / 150 SUS (32 cSt) = .67 △P_{filter} = .34 psi + (.21 psi * .67) = .48 psi OR

△P_{filter} = .34 bar + (.21 bar * .67) = .48 bar

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{element} = Flow Rate x \Delta \mathbf{P}_{f}$ Plug this variable into the overall pressure drop equation.

Ele.	$\triangle \mathbf{P}$
CC3	0.22
CC10	0.13
CC25	0.03
CAS3/CCAS3	0.20
CAS5/CCAS5	0.19
CAS10/CCAS10	0.35

CFX30 Non-Bypassing Pressure Filter

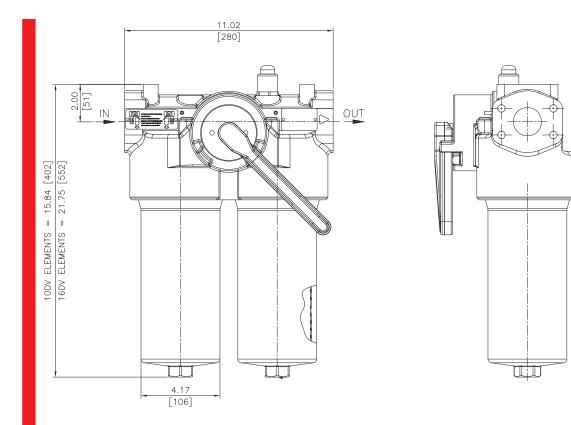
Filter			ber for a Schroeder CFX	30:
Model Number	BOX 1 BOX 2 BOX 3 CFX30	BOX 4 BOX 9	5 BOX 6 BOX 7 BOX 8	
Selection	BOX 1 BOX 2 BOX 3	BOX 4 BOX	5 BOX 6 BOX 7 BOX 8	
	CFX30- CC - Z -	5 -		X30CCZ5SD5
		OX 2	BOX 3	
	Filter Number 8 Series Eleme		Media Type	9
	CFX30 1 C = Sing	gle Length	Omit = E Media (cellulose)	
	CC = Dol	uble Length	Z = Excellement [®] Z-Media [®]	
			AS = Anti-Stat Media (synthe	
			M = Media (reusable metal r	nesn)
	BOX 4		BOX 5	BOX 6
	Micron Ratir	ıg	Seal Material	Porting
	1 = 1 Micron (Z-Media [®])		Omit = Buna N	S = SAE-20
	3 = 3 Micron (E, Z, AS M	edia)	V = Viton®	P = 11/4" NPTF
	5 = 5 Micron (Z, AS Med	ia)	W = Buna N,	B = ISO 228 G-1 ¹ / ₄ "
	10 = 10 Micron (E, M, Z, AS		Anodized Aluminum parts	
	25 = 25 Micron (E & Z-Med	ia®)	H = EPR	
			H.5 = Skydrol® compatibility	
	BOX 7		BOX 8	2
	Options		Dirt Alarm [®] C	ptions
	Omit = None		Omit = None	
	L = Two 1/4" NPTF	Visual	D5 = Visual pop-up	
	inlet and outlet female test ports	Visual with Thermal Lockout	D8 = Visual w/ thermal	lockout
	U = Schroeder Check 7/16"-20 UNF Test	Locitout		. 18 gauge 4-conductor cable
	Point installation		MS5LC = Low current MS5 MS10 = Electrical w/ DIN of	connector (male and only)
	in cap (upstream)		MS10 = Low current MS1	
		Electrical	MS11 = Electrical w/ 12 ft	
		Electrical	$MS12 = \frac{\text{Electrical W} 5 \text{ pin}}{(\text{male end only})}$	Brad Harrison connector
Replacement element part numbers are			MS12LC = Low current MS1	
identical to contents of Boxes 2, 3, 4 and 5.			MS16 = Electrical W/ Weat MS16LC = Low current MS1	her-packed sealed connector 6
E media (cellulose) elements are only				Brad Harrison male connector
available with Buna N seals.			MS5T = MS5 (see above) MS5LCT = Low current MS5	
_		Electrical	MS10T = MS10 (see above)	
5. For options H, V, W, and H.5, all aluminum parts		with	MS10LCT = Low current MS1	
are anodized. H.5 seal designation includes		Thermal	MS12T = MS12 (see above) MS12LCT = Low current MS1	
the following: EPR seals, stainless steel wire mesh		Lockout	MS16T = MS16 (see above)	
on elements, and light oil coating on housing			MS16LCT = Low current MS1 MS17LCT = Low current MS1	
exterior. Viton [®] is a		Electrical	MS13DC = Supplied w/ threa	
registered trademark of DuPont Dow Elastomers.		Visual	MS14DC = Supplied w/ 5 pin I	Brad Harrison connector & light (male end
Skydrol [®] is a registered		Electrical Visual with	MS13DCT = MS13 (see above) MS13DCLCT = Low current MS1), direct current, w/ thermal lockout 3DCT
		visuai Witil		
trademark of Solutia Inc.		Thermal	MS14DCT = MS14 (see above)), direct current, w/ thermal lockout

60 SCHROEDER INDUSTRIES

High Pressure Filter PLD

 Features and Benefits Durable carbon steel construction Filter housings are designed to withstand pressure surges as well as high static pressure loads Screw-in bowl allows the filter element to be easily removed for replacement or cleaning Standard model supplied with drain plugs Standard Viton® seal on filter housing Filter contains an integrated equalization valve Pressure is equalized between filters by raising the change-over lever prior to switching it to the relevant filter side 	NF30 YF30 YF30 CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60 CTF60
n is PLD10DVZ3VF24.	VF60 LW60 KF30 KF50 TF50
Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids Filter 3000 psi (207 bar) Housing 10,600 psi (730 bar) Specifications 3000 psi (207 bar) 102 psi (207 bar) -22°F to 250°F (-30°C to 121°C) 102 psi (7 bar)	KC50 MKF50 MKC50 KC65 HS60
Ductile Iron Steel 97 lbs. (43.9 kg) 100 lbs. (45.3 kg) 10DV: 3.5" (89 mm) 16DV: 3.5" (89 mm)	MHS60 KFH50 LC60 LC35
	LC50
	Features and Benefits Durable carbon steel construction Filter housings are designed to withstand pressure loads Screw-in bowl allows the filter element to be easily removed for replacement or cleaning Standard model supplied with drain plugs Standard Witon[®] seal on filter housing Filter contains an integrated equalization valve Pressure is equalized between filters by raising the change-over lever prior to switching it to the relevant filter side ris PLD10DVZ3VF24. Filter flux contains and state sta

High Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

Element Performance Information & Dirt **Holding Capacity**

Pl

D

		io Per ISO 4572/NF rticle counter (APC) calik	Filtration Ratio	per ISO 16889 ted per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x \ge 200$	$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$
10/16DVZ1	<1.0	<1.0	<1.0	<4.0	4.2
10/16DVZ3	<1.0	<1.0	<2.0	<4.0	4.8
10/16DVZ5	2.5	3.0	4.0	4.8	6.3
10/16DVZ10	7.4	8.2	10.0	8.0	10.0
10/16DVZ25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)
10DVZ1	57	16DVZ1	110
10DVZ3	59	16DVZ3	114
10DVZ5	64	16DVZ5	124
10DVZ10	62	16DVZ10	112
10DVZ25	63	16DVZ25	102
	Element Collapse Rating:	290 psid (20 bar)	
	Flow Direction:	Outside In	
	Element Nominal Dimensions:	3.0" (75 mm) O.D. x 14.	.5" (370 mm) long

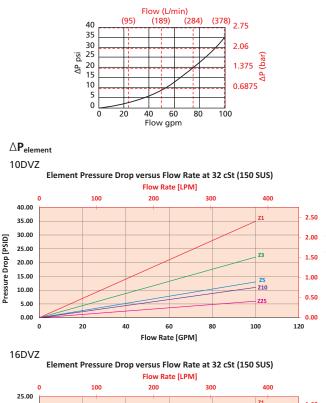
High Pressure Filter

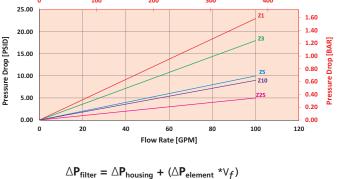
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$\Delta \mathbf{P}_{\mathsf{housing}}$

PLD $\triangle P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:





Exercise:

Determine $\Delta \mathbf{P}_{\text{filter}}$ at 50 gpm (189 L/min) for PLD10DVZ1VF24VM using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 50 gpm. In this case, $\Delta P_{\text{housing}}$ is 8 psi (.55 bar) on the graph for the PLD housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 50 gpm. In this case, $\Delta P_{\text{element}}$ is 17.5 psi (1.2 bar) according to the graph for the 10DVZ1 element.

Because the viscosity in this sample is 200 SUS (42.6 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\Delta \mathbf{P}_{\text{filter}}$, is calculated by adding $\Delta \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\Delta \mathbf{P}_{\text{element}} * V_f$). The $\Delta \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

<u>OR</u>

 $\Delta \mathbf{P}_{\text{housing}} = 8 \text{ psi} [.55 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 17.5 \text{ psi} [1.2 \text{ bar}]$

 $V_f = 200 \text{ SUS } (42.6 \text{ cSt}) / 150 \text{ SUS } (32 \text{ cSt}) = 1.3$ $\Delta \mathbf{P}_{\text{filter}} = 8 \text{ psi} + (17.5 \text{ psi} * 1.3) = 30.8 \text{ psi}$

 $\Delta \mathbf{P}_{filter} = .55 \text{ bar} + (1.2 \text{ bar} * 1.3) = 2.1 \text{ bar}$

Pressure Drop Information Based on Flow Rate and Viscosity

PL

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{element} = \text{Flow Rate } x \, \Delta \mathbf{P}_{f}. \text{Plug}$ this variable into the overall pressure drop equation.

Ele.	${\boldsymbol \Delta} {\boldsymbol P}$	Ele.	${\boldsymbol \Delta} {\boldsymbol P}$	Ele.	$\Delta \mathbf{P}$
K3	0.25	KZW25	0.14	2KZW10	0.12
K10	0.09	2K3	0.12	2KZW25	0.07
K25	0.02	2K10	0.05	3K3	0.08
KAS3	0.10	2K25	0.01	3K10	0.03
KAS5	0.08	2KAS3	0.05	3K25	0.01
KAS10	0.05	2KAS5	0.04	3KAS3	0.03
KZX10	0.22	2KAS10	0.03	3KAS5	0.02
KZW1	0.43	2KZX10	0.11	3KAS10	0.02
KZW3	0.32	2KZW1	-	3KZX10	0.07
KZW5	0.28	2KZW3	0.16		
KZW10	0.23	2KZW5	0.14		

PLD High Pressure Filter

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

Model
Number
Selection

Filter

PLD – – – –	BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6
	PLD -		-			-

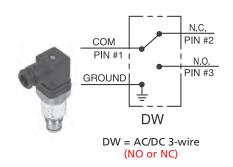
BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 PLD - 10 - DVZ1 - V - F24 - VM = PLD10DVZ1VF24VM

BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Length of Elements (in)	Element Size and Media	Seal Material
	10	DVZ1 = DV size 1 μ synthetic media	Omit = Buna N
PLD	16	DVZ3 = DV size 3 μ synthetic media	V = Viton®
		DVZ5 = DV size 5 μ synthetic media	
		DVZ10 = DV size 10 μ synthetic media	
		DVZ25 = DV size 25 μ synthetic media	

BOX 5		BOX 6
Porting	Dirt Alarm [®] Options	
F24 = $1\frac{1}{2}$ " SAE 4-bolt flange Code 61		Omit = None
S24 = SAE-24 (1½")	Visual	VM = Visual pop-up w/manual rest
	Electrical	DW = AC/DC 3-wire (NO or NC)



VM = Manual Reset



NOTES:

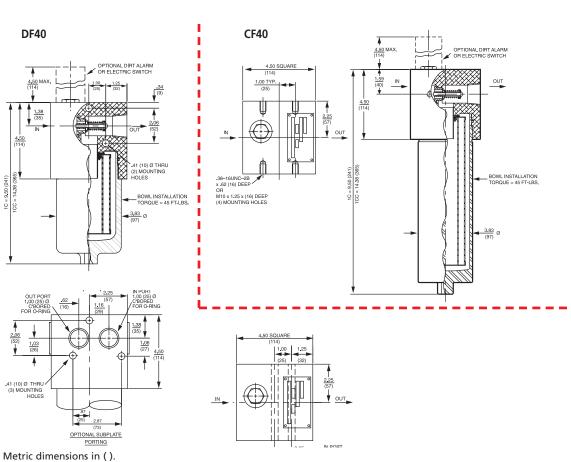
- Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Example: 16DVZ10
- Box 4. Filter housings are supplied with standard Viton seals. Seal designation in Box 4 applies to element only. Viton is a registered trademark of DuPont Dow Elastomers.

Top-Ported Pressure Filter CF40/DF40

Model No. of filter in photograph is	<image/> <image/> <section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header>	Up to 45 gpm <u>170 L/min</u> 4000 psi 275 bar	NF30 NFS30 YF30 CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60 CF60 CTF60 VF60 LW60 KF30 KF50 TF50
Flow Rating:	CF40 - 45 gpm (170 L/min) for 150 SUS (32 cSt) fluids	Filter	КС50
Max. Operating Pressure:	DF40 - 30 gpm (113 L/min) for 150 SUS (32 cSt) fluids 4000 psi (275 bar)	Housing	MKF50
Min. Yield Pressure:	12,000 psi (828 bar), per NFPA T2.6.1	Specifications	
Rated Fatigue Pressure:	1800 psi (125 bar), per NFPA T2.6.1-2005		MKC50
Temp. Range:	-20°F to 225°F (-29°C to 107°C)		KC65
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 72 psi (5.0 bar) Non-bypassing model has a blocked bypass.		HS60
Porting Head:	Aluminum		MHS60
Element Case:	Steel		KFH50
Weight of CF40/DF40-1C: Weight of CF40/DF40-1CC:	14.0 lbs. (6.4 kg) 19.5 lbs. (8.9 kg)		LC60
Element Change Clearance:	4.00" (100 mm) for C elements		LC35
	8.75" (219 mm) for CC elements	•	
			LC50
		1	NOF30-05
Type Fluid Appropri	ate Schroeder Media)F-50-760
	ia (cellulose), Z-Media® and ASP® Media (synthetic)	Compatibility	FOF60-03
High Water Content All Z-Med			
	i μ Z-Media [®] (synthetic), 10 μ ASP [®] Media (synthetic)		NMF30
-	nd 25 µ Z-Media [®] (synthetic), and all ASP [®] Media (synthetic) ia [®] and ASP [®] Media (synthetic) with H (EPR) seal designation		RMF60
·	nd 25 μ Z-Media (synthetic) and all ASP Media (synthetic) with H.5 seal	14	4-CRZX10
designatio	on (EPR seals and stainless steel wire mesh in element, and light oil coating g exterior))-CR7X10

on housing exterior)

CF40/DF40 Top-Ported Pressure Filter



Element Performance Information & Dirt Holding Capacity Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

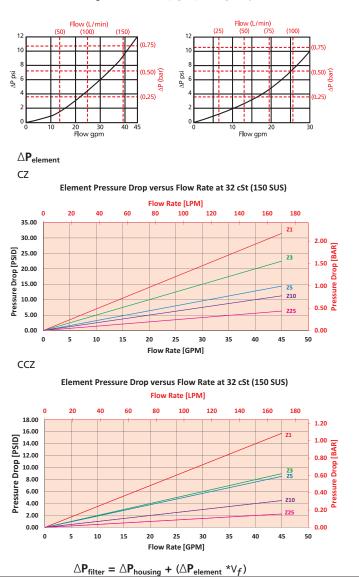
		tio Per ISO 4572/N article counter (APC) cali		per ISO 16889 ted per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x \ge 200$	$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$
CZ1/CCZ1	<1.0	<1.0	<1.0	<4.0	4.2
CZ3/CCZ3	<1.0	<1.0	<2.0	<4.0	4.8
CZ5/CCZ5	2.5	3.0	4.0	4.8	6.3
CZ10/CCZ10	7.4	8.2	10.0	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

Element	DHC (gm)	Element	DHC (gm)
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:) bar) for standard elements 10 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	

Top-Ported Pressure Filter CF40/DF40

$\triangle \mathbf{P}_{\mathsf{housing}}$

CF40/DF40 $\triangle P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



Pressure Drop Information Based on Flow Rate and Viscosity

Exercise:

Determine ΔP_{filter} at 25 gpm (94.6 L/min) for CF401CZ10SD5 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 25 gpm. In this case, $\Delta P_{\text{housing}}$ is 4.5 psi (.31 bar) on the graph for the CF40 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 25 gpm. In this case, $\Delta P_{\text{element}}$ is 6 psi (.42 bar) according to the graph for the CZ10 element.

Because the viscosity in this sample is 200 SUS (42.6 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\Delta \mathbf{P}_{\text{filter}}$, is calculated by adding $\Delta \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\Delta \mathbf{P}_{\text{element}} * V_f$). The $\Delta \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 4.5 \text{ psi} [.31 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 6 \text{ psi} [.42 \text{ bar}]$

 $V_f = 200 \text{ SUS } (42.6 \text{ cSt}) / 150 \text{ SUS } (32 \text{ cSt}) = 1.3$

$$\Delta \mathbf{P}_{\text{filter}} = 4.5 \text{ psi} + (6 \text{ psi}^{1.3}) = 12.3 \text{ psi}$$

OR

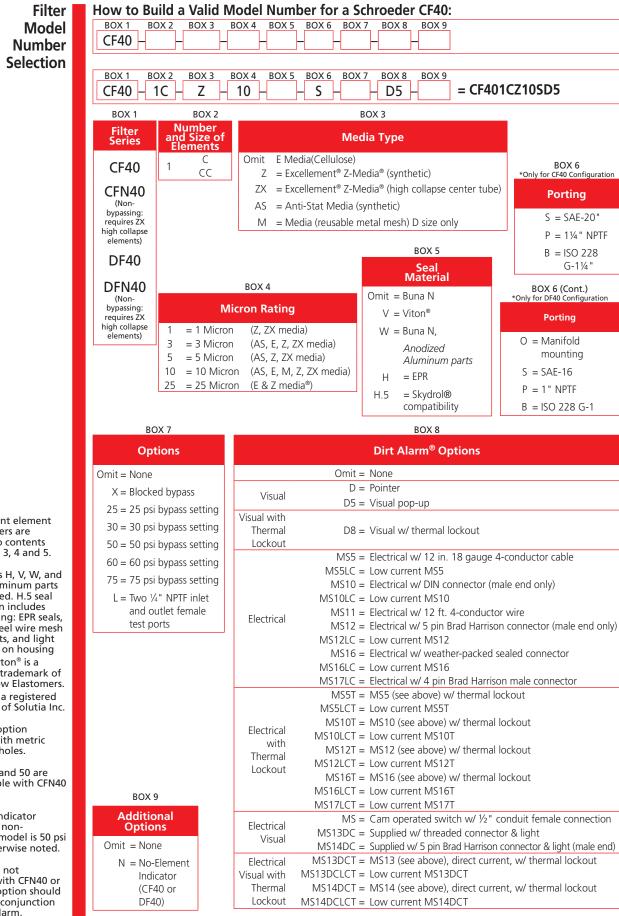
 $\Delta P_{\text{filter}} = .31 \text{ bar} + (.42 \text{ bar} * 1.3) = .86 \text{ bar}$

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{\text{element}} = \text{Flow Rate x } \Delta \mathbf{P}_{f}$. Plug this variable into the overall pressure drop equation.

Ele.	$\Delta \mathbf{P}$	Ele.	$\triangle \mathbf{P}$
C3	0.50	CC3	0.22
C10	0.19	CC10	0.13
C25	0.09	CC25	0.03
CAS3	0.50	CCAS3	0.20
CAS5	0.32	CCAS5	0.19
CAS10	0.25	CCAS10	0.10
		CCZX3	0.29
		CCZX10	0.26

CF40/DF40 Top-Ported Pressure Filter



NOTES:

Box 2. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5.

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 or DFN40.

Box 8. Standard indicator setting for nonbypassing model is 50 psi unless otherwise noted.

Box 9. N option is not available with CFN40 or DFN40. N option should be used in conjunction with dirt alarm.

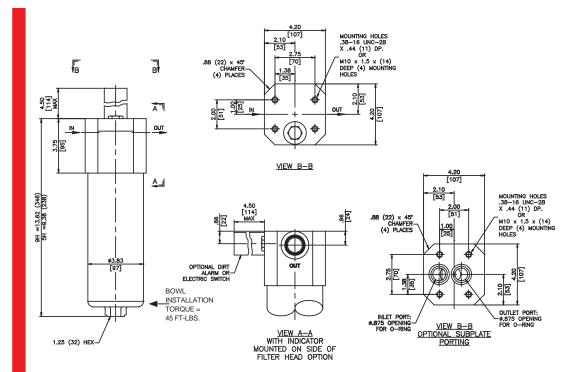
68 SCHROEDER INDUSTRIES

Top-Ported Pressure FilterPF40

Image: Note of the second se	<section-header><section-header><section-header><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></section-header></section-header></section-header>	50 gpm NF30 190 L/min NF530 40000 psi YF30 275 bar CFX30 0100 CF40 0101 CF40 0101 CF60 0101 CF60 0101 CF60 0101 CF50 0101 CF50	D D D D D D D D D D D D D D D D D D D
Flow Rating:	Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids	Filter MKF50	
Max. Operating Pressure:	4000 psi (275 bar)	Housing	
Min. Yield Pressure:	12,000 psi (828 bar), per NFPA T2.6.1	Specifications MKC5)
Rated Fatigue Pressure:	2500 psi (173 bar), per NFPA T2.6.1-R1-2005	KC6	5
Temp. Range:	-20°F to 225°F (-29°C to 107°C)		
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 75 psi (5.2 bar)	HS60)
Porting Head:	Steel	MHS60	0
Element Case:	Steel	KFH5	0
Weight of PF40-5H: Weight of PF40-9H:	21.8 lbs. (9.9 kg) 25.5 lbs. (11.6 kg)		
Element Change Clearance:	3.25" (83 mm)	LC60	J
		LC3	5
		LC5	0
		NOF30-0!	
Type Fluid Appropriate Sch		Fluid NOF-50-760)
Petroleum Based Fluids All E Media (cellul		Compatibility FOF60-03	3
High Water Content All Z-Media® (synt Invert Emulsions 10 and 25 µ Z-Me		NMF3	0
Water Glycols 3, 5, 10 and 25 μ	-		
Phosphate Esters All Z-Media® (synt		RMF60)
		14-CRZX10	0
		20-CRZX10	0



Top-Ported Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

		tio Per ISO 4572/N article counter (APC) ca		D per ISO 16889 Ited per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x \ge 200$	$\beta_{x}(c)\geq 200$	$\beta_x(c) \geq 1000$
5HZ1/9HZ1	<1.0	<1.0	<1.0	<4.0	4.2
5HZ3/9HZ3	<1.0	<1.0	<2.0	<1.0	4.8
5HZ5/9HZ5	2.5	3.0	4.0	4.8	6.3
5HZ10/9HZ10	7.4	8.2	10.0	8.0	10.0
5HZ25/9HZ25	18.0	20.0	22.5	19.0	24.0
5HZX1/9HZX1	<1.0	<1.0	<1.0	<4.0	4.2
5HZX3/9HZX3	<1.0	<1.0	<2.0	<1.0	4.8
5HZX5/9HZX5	2.5	3.0	4.0	4.8	6.3
5HZX10/9HZX10	7.4	8.2	10.0	8.0	10.0
5HZX25/9HZX25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
5HZ1	26	9HZ1	51	5HZX1	14	9HZX1	29
5HZ3	28	9HZ3	42	5HZX3	14	9HZX3	29
5HZ5	39	9HZ5	59	5HZX5	15	9HZX5	31
5HZ10	31	9HZ10	47	5HZX10	15	9HZX10	31
5HZ25	32	9HZ25	48	5HZX25	16	9HZX25	33

Flow Direction: Outside In

3000 psid (210 bar) for high collapse elements

Element Collapse Rating: 150 psid (10 bar) for standard elements

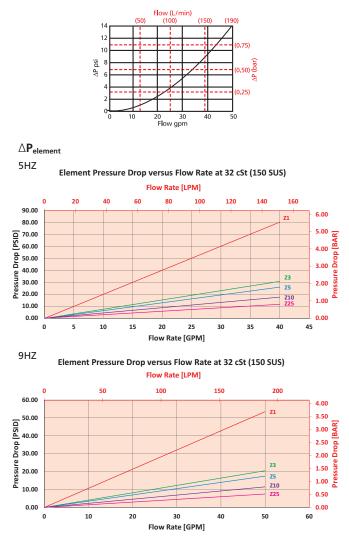
Element Nominal Dimensions: 5H: 2.5" (100 mm) O.D. x 5.36" (136 mm) long 9H: 2.5" (100 mm) O.D. x 9.63" (244 mm) long

Element Performance **Information & Dirt Holding Capacity**

Top-Ported Pressure Filter **PF4**

$\triangle \mathbf{P}_{\mathsf{housing}}$

PF40 $\triangle P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



 $\triangle \mathbf{P}_{\text{filter}} = \triangle \mathbf{P}_{\text{housing}} + (\triangle \mathbf{P}_{\text{element}} * \mathsf{V}_f)$

Exercise:

Determine ΔP_{filter} at 20 gpm (75.7 L/min) for PF405HZ3SD5S using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 20 gpm. In this case, $\Delta P_{\text{housing}}$ is 2.5 psi (.17 bar) on the graph for the PF40 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 20 gpm. In this case, $\Delta P_{element}$ is 15 psi (1 bar) according to the graph for the 5HZ3 element.

Because the viscosity in this sample is 160 SUS (34 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\triangle \mathbf{P}_{\text{filter}}$, is calculated by adding $\triangle \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\triangle \mathbf{P}_{\text{element}} * V_f$). The $\triangle \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 2.5 \text{ psi} [.17 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 15 \text{ psi} [1 \text{ bar}]$

V_f = 160 SUS (34 cSt) / 150 SUS (32 cSt) = 1.1 △ $P_{\text{filter}} = 2.5 \text{ psi} + (15 \text{ psi} * 1.1) = 19 \text{ psi}$ OR

 $\Delta \mathbf{P}_{filter} = .17 \text{ bar} + (1 \text{ bar} * 1.1) = 1.3 \text{ bar}$

Pressure Drop Information Based on Flow Rate and Viscosity

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{\text{element}} = \text{Flow Rate x } \Delta \mathbf{P}_{f}$. Plug this variable into the overall pressure drop equation.

Ele.	$\triangle \mathbf{P}$
5HZX3	1.17
5HZX10	0.50
5HZX25	0.27
9HZX3	0.62
9HZX10	0.26
9HZX25	0.14

PF40 Top-Ported Pressure Filter

Filter Model Number Selection	How to Build a Valid Model Number for a Schroeder PF40: $\begin{array}{c ccccccccccccccccccccccccccccccccccc$							
	BOX 1	BOX 2			BOX 3			
	Filter Series	Element Length (in)			Element Part Number			
	PF40	5		HZ1 = H size 1 µ Excelle	ement® Z-Media® (synthetic)			
	PFN40 (Non- bypassing: requires ZX high collapse elements)	9	ŀ	 HZ3 = H size 3 μ Excellement[®] Z-Media[®] (synthetic) HZ5 = H size 5 μ Excellement[®] Z-Media[®] (synthetic) HZ10 = H size 10 μ Excellement[®] Z-Media[®] (synthetic) HZ25 = H size 25 μ Excellement[®] Z-Media[®] (synthetic) HZX3 = H size 3 μ Excellement[®] Z-Media[®] (high collapse center tube) HZX10 = H size 10 μ Excellement[®] Z-Media[®] (high collapse center tube) HZX25 = H size 25 μ Excellement[®] Z-Media[®] (high collapse center tube) 				
		BOX 4		BOX 5	BOX 6			
	Sea	l Material		Porting	Options			
	Omit = Buna N H = EPR			O = Manifold	Omit = None			
				S = SAE-16	L = Two ¼" NPTF inlet & outlet female test ports			
	V = Viton [®] H.5 = Skydrol [®] compatibility			B = ISO 228 G-1"	U = Schroeder Check 7/16"-20 UNF test point			
					installation in head (upstream)			

		BOX 7	BOX 8
		Dirt Alarm [®] Options	Dirt Alarm [®] Location
		Omit = None	Omit = Top mounted
	Visual	D5 = Visual pop-up	S = Side mounted
	Visual with Thermal	D8 = Visual w/ thermal lockout	
	Lockout		BOX 9
		MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable MS5LC = Low current MS5	Bowl Drain Options
		MS10 = Electrical w/ DIN connector (male end only) MS10LC = Low current MS10	Omit = None
		MSTOLC = Low current MSTOMS11 = Electrical w/ 12 ft. 4-conductor wire	DR = Drain 7/16"-20
	Electrical	MS11 = Electrical W/2 R. = Conductor WiteMS12 = Electrical W/5 pin Brad Harrison connector (male end only)	
		MS12LC = Low current MS12	
		MS16 = Electrical w/ weather-packed sealed connector	
S		MS16LC = Low current MS16	
		MS17LC = Electrical w/ 4 pin Brad Harrison male connector	
s,		MS5T = MS5 (see above) w/ thermal lockout	
sh		MS5LCT = Low current MS5T	
	Electrical with	MS10T = MS10 (see above) w/ thermal lockout	
		MS10LCT = Low current MS10T	
of	Thermal	MS12T = MS12 (see above) w/ thermal lockout MS12LCT = Low current MS12T	
s.	Lockout	MS12LCT = LOW current MS12T MS16T = MS16 (see above) w/ thermal lockout	
с.		MS16LCT = Low current MS16T	
C.		MS10LCT = Low current MS10T MS17LCT = Low current MS17T	
	Electrical	MS17ECT = Low current MS17T MS13DC = Supplied w/ threaded connector & light	-
	Visual	MS14DC = Supplied W/ threaded connector & light (male end) MS14DC = Supplied W/ 5 pin Brad Harrison connector & light (male end)	
		MS13DCT = MS13 (see above), direct current, w/ thermal lockout	-
	Electrical	MS13DCLCT = Low current MS13DCT	
	Visual with Thermal		
	Lockout	MS14DCT = MS14 (see above), direct current, w/ thermal lockout	
	LUCKUUL	MS14DCLCT = Low current MS14DCT]

NOTES:

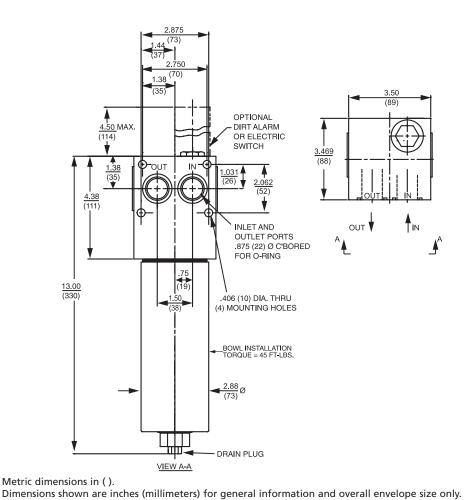
- Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Example: 5HZ10V
- Box 4. For options H, V, and H.5, all aluminum parts are anodized. H.5 seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior. 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 7. Standard indicator setting for nonbypassing model is 50 psi unless otherwise noted.

Manifold Mounted Pressure Filter RFS50

	<section-header><section-header><section-header><section-header><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></section-header></section-header></section-header></section-header>	30 gpm NF30 115 L/min NF530 5000 psi YF30 5005 bar CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60 CF60 LW60 KF30 KF30 KF30
Max. Operating Pressu Min. Yield Pressu Rated Fatigue Pressu Temp. Ran Bypass Setti Porting He Element Ca Weight of RFS50-	re: 15,500 psi (1070 bar), per NFPA T2.6.1 re: Contact Factory ge: -20°F to 225°F (-29°C to 107°C) ng: Cracking: 40 psi (2.8 bar) Full Flow: 56 psi (3.9 bar) ad: Steel se: Steel se: Steel se: Steel se: Steel	TF50 KC50 Filter MKF50 Housing Specifications MKC50 KC65 HS60 MHS60 KFH50 LC60
Skydrol [®] 3, 5, 10 and	re Schroeder Media (cellulose) and Z-Media® (synthetic) ® (synthetic) µ Z-Media® (synthetic)	LC35 LC50 NOF30-05 Fluid NOF-50-760 Compatibility FOF60-03 NMF30 RMF60 14-CRZX10 20-CRZX10



Manifold Mounted Pressure Filter



Element Performance Information & Dirt Holding Capacity

For complete dimensions please contact Schroeder Industries to request a certified print.

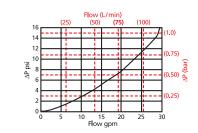
		tio Per ISO 4572/N article counter (APC) cal		o per ISO 16889 Ited per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$	
8RZ1	<1.0	<1.0	<1.0	<4.0	4.2
8RZ3	<1.0	<1.0	<2.0	<4.0	4.8
8RZ5	2.5	3.0	4.0	4.8	6.3
8RZ10	7.4	8.2	10.0	8.0	10.0
8RZ25	18.0	20.0	22.5	19.0	24.0

Eleme	ent DHC (gm)	
8RZ1	33	
8RZ3	26	
8RZ5	51	
8RZ10) 29	
8RZ25	30	
	Element Collapse Rating:	150 psid (10 bar) for standard elements
	Flow Direction:	Outside In
Elen	nent Nominal Dimensions:	2.18" (55 mm) O.D. x 8.15" (206 mm) long

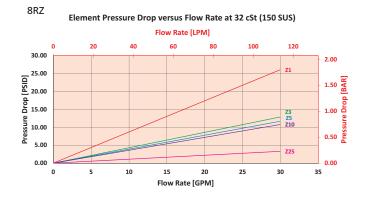
Manifold Mounted Pressure Filter RFS50

$\Delta \mathbf{P}_{\text{housing}}$

RFS50 $\triangle \mathbf{P}_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



 $\Delta \mathbf{P}_{element}$



Pressure Drop Information Based on Flow Rate and Viscosity

 $\triangle \mathbf{P}_{\text{filter}} = \triangle \mathbf{P}_{\text{housing}} + (\triangle \mathbf{P}_{\text{element}} * \mathsf{V}_f)$

Exercise:

Determine $\Delta \mathbf{P}_{\text{filter}}$ at 15 gpm (57 L/min) for RFS508RZ10VOD5 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 15 gpm. In this case, $\Delta P_{\text{housing}}$ is 5 psi (.34 bar) on the graph for the RFS50 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 15 gpm. In this case, $\Delta P_{element}$ is 5 psi (.34 bar) according to the graph for the 8RZ10 element.

Because the viscosity in this sample is 200 SUS (42.6 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\triangle \mathbf{P}_{\text{filter}}$, is calculated by adding $\triangle \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\triangle \mathbf{P}_{\text{element}} * V_f$). The $\triangle \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

OR

 $\Delta \mathbf{P}_{\text{housing}} = 5 \text{ psi } [.34 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 5 \text{ psi } [.34 \text{ bar}]$

V_f = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3 △ P_{filter} = 5 psi + (5 psi * 1.3) = 11.5 psi

 $\Delta \mathbf{P}_{filter} = .34 \text{ bar} + (.34 \text{ bar} * 1.3) = .78 \text{ bar}$

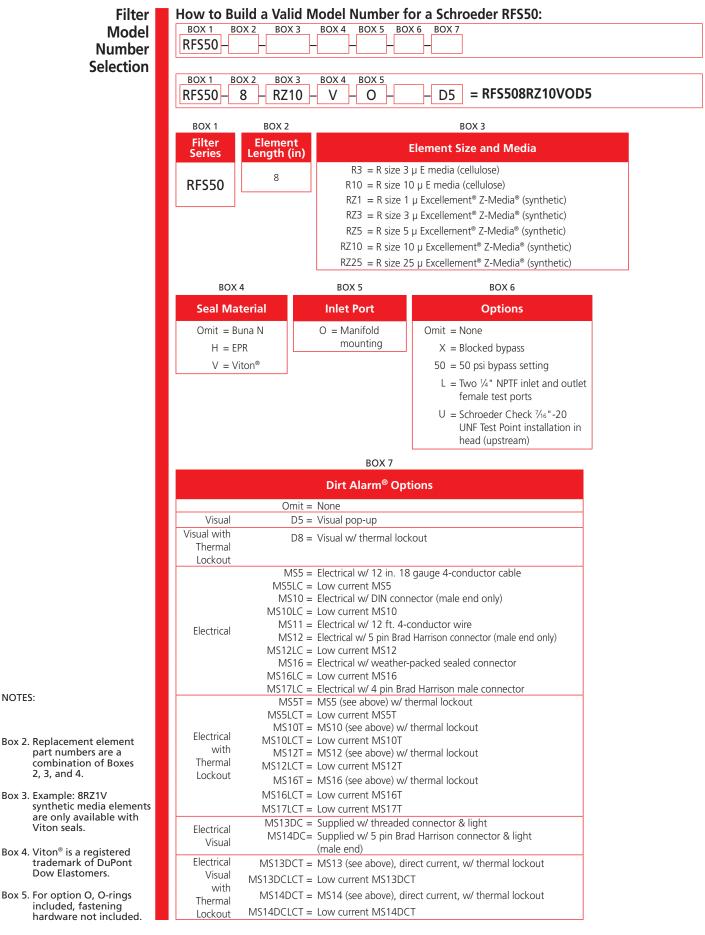
Note:

8R10

If your element is not graphed, use						
the following equation:						
$\Delta \mathbf{P}_{element} = Flow Rate x \Delta \mathbf{P}_f Plug$						
this variable into the overall						
pressure drop equation.						
Ele. △P						
8R3	0.35					

0.30

RFS50 Manifold Mounted Pressure Filter



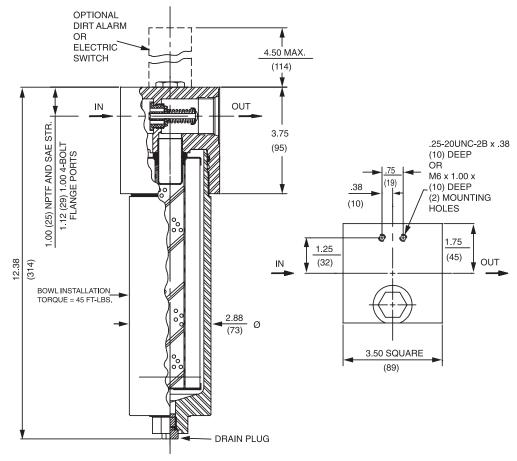
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Top-Ported Pressure Filter **RF60**

Model No. of filter in pho	<image/> <section-header><section-header><section-header><list-item><list-item><list-item><section-header></section-header></list-item></list-item></list-item></section-header></section-header></section-header>	30 gpm <u>115 L/min</u> 6000 psi 415 bar	NF30 NFS30 YF30 CFX30 PLD CF40 DF40 PF40 PF40 RFS50 RF60 CF60 CF60 VF60 LW60 KF30 KF50
Max. Operating Pro Min. Yield Pro Rated Fatigue Pro Temp. F	ating: Up to 30 gpm (115 L/min) for 150 SUS (32 cSt) fluids assure: 6000 psi (415 bar) assure: 18,000 psi (1241 bar), per NFPA T2.6.1 assure: 2300 psi (159 bar), per NFPA T2.6.1-2005 ange: -20°F to 225°F (-29°C to 107°C) etting: Cracking: 40 psi (2.8 bar) Full Flow: 56 psi (3.9 bar)	Filter Housing Specifications	TF50 KC50 MKF50 MKC50 KC65 HS60
Elemen	Non-bypassing model has a blocked bypass. Head: Steel 50-8R: 15.75 lbs. (7.2 kg) rance: 3.0" (75 mm)		MHS60 KFH50 LC60 LC35 LC50
Petroleum Based Fluids	Appropriate Schroeder Media All E-Media (cellulose) and Z-Media® (synthetic) All Z-Media® (synthetic)	Fluid NOF Compatibility	DF30-05 -50-760 DF60-03
Invert Emulsions Water Glycols Phosphate Esters	 10 and 25 μ Z-Media[®] (synthetic) 3, 5, 10 and 25 μ Z-Media[®] (synthetic) All Z-Media[®] (synthetic) with H (EPR) seal designation 3, 5, 10 and 25 μ Z-Media[®] (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior) 		NMF30 RMF60 CRZX10 CRZX10

RF60

Top-Ported Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

Filtration Ratio per ISO 16889

Using APC calibrated per ISO 11171

Filtration Ratio Per ISO 4572/NFPA T3.10.8.8

Using automated particle counter (APC) calibrated per ISO 4402

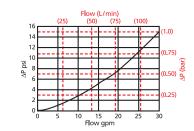
Element Performance Information & Dirt Holding Capacity

Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x \geq 200$	$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$		
8RZ1	<1.0	<1.0	<1.0	<4.0	4.2		
8RZ3	<1.0	<1.0	<2.0	<4.0	4.8		
8RZ5	2.5	3.0	4.0	4.8	6.3		
8RZ10	7.4	8.2	10.0	8.0	10.0		
8RZ25	18.0	20.0	22.5	19.0	24.0		
8RZX3	<1.0	<1.0	<2.0	4.7	5.8		
8RZX10	7.4	8.2	10.0	8.0	9.8		
Element	DHC (gm)						
8RZ1	33						
8RZ3	26						
8RZ5	51						
8RZ10	29						
8RZ25	30						
8RZX3	C/F						
8RZX10	C/F						
Element	Collapse Rating:	150 psid (10 bar) 1 3000 psid (210 ba	or standard elemer r) for high collapse				
	Flow Direction:	Outside In					
Element Nom	inal Dimensions:	2.18" (55 mm) O.	D. x 8.15" (206 mn	n) long			

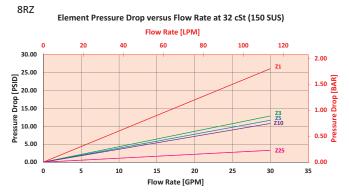
Top-Ported Pressure Filter **RF6**

$\Delta \mathbf{P}_{\mathsf{housing}}$

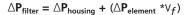
RF60 $\triangle \mathbf{P}_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



 $\triangle \mathbf{P}_{element}$



Pressure Drop Information Based on Flow Rate and Viscosity



Exercise:

Determine $\Delta \mathbf{P}_{filter}$ at 15 gpm (57 L/min) for RF608RZ10VPD5 using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 15 gpm. In this case, $\Delta P_{\text{housing}}$ is 5 psi (.34 bar) on the graph for the RF60 housing.

Use the element pressure curve to determine $\Delta \mathbf{P}_{\text{element}}$ at 15 gpm. In this case, $\Delta \mathbf{P}_{\text{element}}$ is 5 psi (.34 bar) according to the graph for the 8RZ10 element.

Because the viscosity in this sample is 100 SUS (21.3 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\Delta \mathbf{P}_{\text{filter}}$, is calculated by adding $\Delta \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\Delta \mathbf{P}_{\text{element}} * V_f$). The $\Delta \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 5 \text{ psi } [.34 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 5 \text{ psi } [.34 \text{ bar}]$

V_f = 100 SUS (21.3 cSt) / 150 SUS (32 cSt) = .67 △ P_{filter} = 5 psi + (5 psi * .67) = 8.3 psi OR

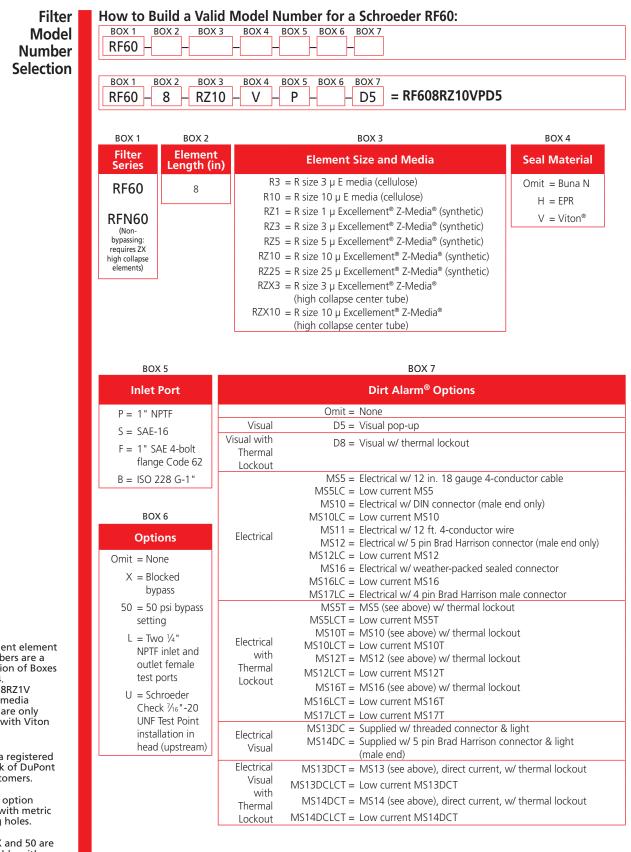
△P_{filter} = .34 bar + (.34 bar * .67) = .57 bar

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{\text{element}} = \text{Flow Rate x } \Delta \mathbf{P}_{f}$ Plug this variable into the overall pressure drop equation.

Ele.	$\triangle \mathbf{P}$
8R3	0.35
8R10	0.30
8RZX3	C/F
8RZX10	C/F

RF60 Top-Ported Pressure Filter



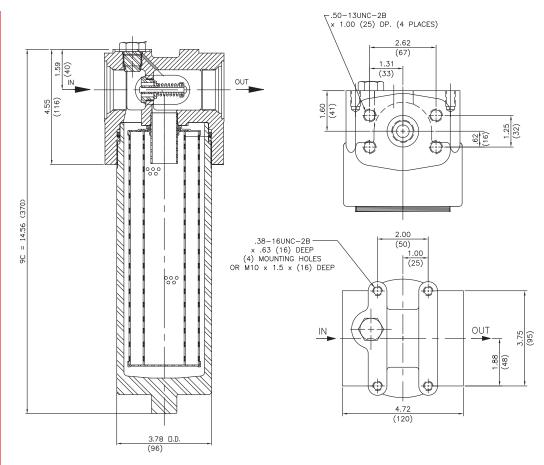
- Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Example: 8RZ1V synthetic media elements are only available with Viton seals.
- Box 4. Viton[®] is a registered trademark of DuPont Dow Elastomers.
- Box 5. B porting option supplied with metric mounting holes.
- Box 6. Options X and 50 are not available with RFN60.
- Box 7. Standard indicator setting for nonbypassing model is 50 psi unless otherwise noted.

Top-Ported Pressure Filter CF60

For the set of the set o	6			50 anm	NF30
Top-ported high pressure fitter - No-ibless up fitter - Available with non-bypass option YF30 - More-bypass option - Offered in pipe. SAE straight thread, finange and ISO 228 porting - Offered in pipe. SAE straight thread, finange and ISO 228 porting PLD - No-Element indicator option available - Offered in pipe. SAE straight thread, finange and ISO 228 porting - Offered in pipe. SAE straight thread, finange and ISO 228 porting - Refo Model No. of filter in photograph is CF601CC23SD5. - KF50 - KF50 - KF50 Model No. of filter in photograph is CF601CC23SD5. - KF50 - KF50 - KF50 Min. Yield Pressure: - K000 pip (170 bar), per NFA T2.6.1 - KF50 - KF50 Min. Yield Pressure: - K000 pip (170 bar), per NFA T2.6.1 - KF50 - KF50 Bypass Setting: - Cracking: 40 pip (127 bar), per NFA T2.6.1 - KK50 - KK50 Bypass Setting: - Cracking: 40 pip (127 bar), per NFA T2.6.1 - KK50 - KK50 Bypass Setting: - Cracking: 40 pip (128 bar) - KK50 - KK650 Bypass Setting: - Cracking: 40 pip (128 bar) - KK650					NFS30
Available with find collapse element Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in the straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in the straight thread, timage and SD2 Bip orbin Section SD2 Bip orb2 Bip orb Section S			Features and Benefits		-
Available with find collapse element Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in pipe, SAE straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in the straight thread, timage and SD2 Bip orbin Not-Element indicator option available Offered in the straight thread, timage and SD2 Bip orbin Section SD2 Bip orb2 Bip orb Section S		10		6000 psi	YF30
 Offered in pipe. SAE straight thread. Image and SD2 apporting No-Element indicator option available PED Provide indicator option available PF40 PF40				415 bar	CFX30
No-Element indicator option available CF40 PF40 PF40 PF40 PF40 RF550 RF60 CF66 CCF66 CCF6 CCF66 CCF6 CCF66 CCF6 CCF6 CCF66 CCF6 CCF6			 Offered in pipe, SAE straight thread, 		PLD
Filter Proving the SCF601CC23SDS. Private Stress Stre					CF40
Flow Rating: Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids Filter KF30 Model No. of filter in photograph is CF601CCZ3SD5. KF30 KF30 Model No. of filter in photograph is CF601CCZ3SD5. KF30 KK730 Flow Rating: Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids Filter MK750 Max. Operating Pressure: 6000 pi (415 ban) MKF50 MK50 Min. Yteld Pressure: 15,500 pi (1070 ban), per NFPA T2.6.1 MK50 MK50 Rated Fatigue Pressure: 4000 pi (276 ban), per NFPA T2.6.1 MK50 MK50 Temp. Ranee: 225°F (22°C t07°C) H50 MK50 MK50 Bypass Setting: Cacking: 40 gpl (28 ban) mon-bypassing model has a blocked bypass. MH500 KF40 Element Chang: 24 0 lbs. (10.9 kg) LC60 LC60 LC60 Element Change Clearance: 40° (103 mm) LC63 LC60 LC60 NOF30-05 Mingh Water Conter: Al Z-Media ⁸ and ASP ^m Media (synthetic) MM730 NM730 NM730 Mingh Water Conter: Al Z-Media ⁸ and ASP ^m Media (synthetic) NM730 NM730 NM730 NM730 Miner Olyposta					DF40
Model No. of filter in photograph is CF601CC23SD5. RF630 Model No. of filter in photograph is CF601CC23SD5. CTF60 Version VF60 Model No. of filter in photograph is CF601CC23SD5. Filter Flow Rating: Up to 50 gpm (190 Umin) for 150 SUS (32 cSt) fluids Filter Min. Yeld Pressure: 6000 psi (157 ban), per NFPA T2.6.1 MKF50 Min. Yeld Pressure: 15,500 pati (1070 ban), per NFPA T2.6.1.81-2005 MKF50 Min. Yeld Pressure: 16,500 pati (1070 ban), per NFPA T2.6.1.81-2005 KC655 Temp. Range: 20°F to 225°F (22°C to 10°F°C) MKF50 Bypass Setting: Cracking: 40 psi (2.8 ban) Mon-bypassing model has a blocked bypass. MKF50 Opting Head: Work T0 (2.8 ban) Mon-bypassing model has a blocked bypass. MKF50 Versight of CF0-SC: 242 ob ls. (10.9 kg) LC60 Element Change Clearance: 4.0° (103 mm) LC60 Type Fluid Appropriate Schroeder Media MMF60 Norder Opsena LC60 NOF30-055 Tereoreum Based Fluids All E-Media" and ASP" Media (synthetic) MMP30 High Water Content All 2-Media" and ASP" Media (synthetic) NMF30 High Water Content All 2-Media" and ASP" Media (synthetic) NMF30 High Wa					
Model No. of filter in photograph is CF601CC23SD5. Ref0 Model No. of filter in photograph is CF601CC23SD5. KF60 Model No. of filter in photograph is CF601CC23SD5. KF30 Model No. of filter in photograph is CF601CC23SD5. KF30 Flow Rating: Up to 50 gpm (190 L/min) for 150 SUS (32 cS) fluids Filter Min. Yield Pressure: 6000 pis (135 bar) KK50 Min. Yield Pressure: 15,500 pis (1070 bar), per NFPA T2.6.1 KK50 Rated Faitigue Pressure: 15,500 pis (1070 bar), per NFPA T2.6.1 KK650 Temp. Range: -20°T to 225°F (25°C to 107°C) KC65 Bypass Setting: Cracking: 40 pis (2.5 bar) KK750 Min Settile Ioni Cracking: 40 pis (2.5 bar) KC650 Weight of C60-92: 2.40 bits (10.3 kp) Element C6a-92: 2.40 bits (10.3 kp) LC660 Element Change Clearance: 4.0° (103 mm) LC600 LC630 C1070 LC630 LC630 LC630 LC630 LC630 LC630 LC630 Verify Model Appropriate Schroeder Media Fluid MOP-50-760 Type Huid Appropriate Schroeder Media (synthetic) MIE30 NOF30-050 Fluid All E-Media (cellulose), Z-Media ² and ASP ^m Media (synthetic) MIE					
Model No. of filter in photograph is CF601CC23SD5. CTF60 Model No. of filter in photograph is CF601CC23SD5. KF60 Model No. of filter in photograph is CF601CC23SD5. KF60 Flow Rating: Up to 50 gpm (190 L/min) for 150 SU5 (32 c51) fluids KF60 Min. Yield Pressure: 15,500 psi (1070 ban), per KPRA T2.6.1 KF60 Min. Yield Pressure: 15,500 psi (1070 ban), per KPRA T2.6.1 MKr50 Specifications MKr50 KC50 Temp. Range: -Cort to 225F (226 to 107%) KC50 Bypass Setting: Cracking: 40 psi (2.8 ban) Full Pow: KC50 Porting Head: Ductile Iron KF450 Weight of CF60-9C: 24.0 lbs. (10.9 kg) LC60 Element Cas: Steel KF450 Weight of CF60-9C: 24.0 lbs. (10.9 kg) LC60 Ither Change Clearance: 4.0° (103 mm) LC35 LC30 KF450 KF450 Weight of CF60-9C: 24.0 lbs. (10.9 kg) LC60 Ither Change Clearance: 4.0° (103 mm) LC35 KF450 MOF-50-760 Compatibility F0F60-03 Weight of CF60-9C: 2.4.0 lbs. (40 kg/mtetic)					RFS50
Model No. of filter in photograph is CF601CCZ3SDS. CTF60 Model No. of filter in photograph is CF601CCZ3SDS. KF30 KF50 KF50 TF50 KF50 Min. Yield Pressure: 5000 psi (415 bai) Min. Yield Pressure: 5000 psi (415 bai) Min. Yield Pressure: 1500 psi (1070 ban), per NFPA T2.6.1 Rated Patigue Pressure: 4000 psi (276 ban), per NFPA T2.6.1 Rated Patigue Pressure: 6000 psi (276 ban), per NFPA T2.6.1 Rated Patigue Pressure: 6000 psi (276 ban), per NFPA T2.6.1 Non-bypassing model has a blocked bypass. MKF50 Mon-bypassing model has a blocked bypass. MH560 KFF150 LC600 Element Change Clearance: 4.0° (103 mm) LC35 LC600 Petroleum Based Fluids All E-Media (cellulose), Z-Media* and ASP* Media (synthetic) High Water Content All Z-Media* and ASP* Media (synthetic) High Water Gortent All Z-Media* and ASP* Media (synthetic) Wrief Glycols 3, 5, 10 and 25 µ Z-Media* and ASP* Media (synthetic) Wrief Glycols 3, 5, 10 and 25 µ Z-Media* and ASP* Media (synthetic) Wrief Glycols 3, 5, 10 and 25 µ Z-Media* and al ASP* Media (synthetic)<					RF60
Model No. of filter in photograph is CF601CCZ3SDS. KF60 Model No. of filter in photograph is CF601CCZ3SDS. KF30 Model No. of filter in photograph is CF601CCZ3SDS. KF30 Model No. of filter in photograph is CF601CCZ3SDS. KF30 Flow Rating: Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids Filter Min. Yield Pressure: 6000 psi (415 bar) MKF50 Max. Operating Pressure: 6000 psi (276 bar), per NFPA T2.6.1 MKF50 Rated Fatigue Pressure: 4000 psi (276 bar), per NFPA T2.6.1-R1-2005 KC65 Termp. Range: -20°F to 225F (229°C to 107°C) Bypass Setting: Cracing: 4.09 if (2.6 bar)					CF60
Model No. of filter in photograph is CF601CCZ3SD5. LW60 Model No. of filter in photograph is CF601CCZ3SD5. KF50 Flow Rating: Up to 50 gpm (190 Umin) for 150 SUS (32 cSt) fluids Filter Max. Operating Pressure: 6000 psi (415 bar) MKF50 Max. Operating Pressure: 15,500 psi (1070 bar), per NFPA T2.6.1 MKC50 Rated Fatigue Pressure: 4000 psi (276 bar), per NFPA T2.6.1 MKC50 Bypass Setting: Cracking: 40 psi (32 bar) MKC50 Porting Head: Ductile Iron KrF50 Element Case: Steel KFF50 Weight of CF60-9C: 24.0 lbs. (10.9 kg) LC660 Element Change Clearance: 4.0° (103 mm) LC650 Type Fluid Appropriate Schroeder Media KFF50 Mingh Water Conter All Z-Media® and ASP® Media (synthetic) MInF30 Invert Emusions 10 and 25 p z-Media® and ASP® Media (synthetic) NMF30 Water Glycois 3, 5, 10 and 25 p z-Media® and ASP® Media (synthetic) NMF30 Water Glycois 3, 5, 10 and 25 p z-Media® and ASP® Media (synthetic) NMF30 Water Glycois 3, 5, 10 and 25 p z-Media® and ASP® Media (synthetic) NMF30 Water Glycois 3, 5, 10 and 25 p z-Media® and ASP® Media (synthetic) NMF30					CTF60
Model No. of filter in photograph is CF601CCZ3SD5. LW60 Model No. of filter in photograph is CF601CCZ3SD5. KF50 Flow Rating: Up to 50 gpm (190 U/min) for 150 SUS (32 cSt) fluids Filter Max. Operating Pressure: 6000 psi (415 bar) MKF50 Max. Operating Pressure: 15,500 psi (1070 bar), per NFPA T2.6.1 MKF50 Rated Fatigue Pressure: 4000 psi (276 bar), per NFPA T2.6.1 MKF50 Bypass Settritis: Cracking: 40 psi (32 bar) MKF50 Porting Head: Ductile Iron MH560 Element Case: Steel KFF50 Weight of CF60-9C: 24.0 lbs. (10.9 kg) LC660 Element Change Clearance: 4.0° (103 mm) LC650 Type Fluid Appropriate Schroeder Media KFF50 More-Sop-Sop Fluid NOF-Sop-Sop Type Fluid Appropriate Schroeder Media (synthetic) MH560 Invert Emusion: 0 10 and 25 µ z-Media® and ASP® Media (synthetic) MMF30 NMF30 3, 5, 10 and 25 µ z-Media® and ASP® Media (synthetic) MMF30 Weight of Cf60-92 3, 5, 10 and 25 µ z-Media® and ASP® Media (synthetic) MMF30 Migh Water Conter Al Z-Media® and ASP® Media (synthetic) MMF30 Migh Water Gonter Al Z-Media®					VF60
Model No. of filter in photograph is CF601CC23SD5. KF30 K650 KF50 Flow Rating: Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids Filter Max. Operating Pressure: 6000 psi (115 bar) MKF50 Min. Yield Pressure: 15,500 psi (1070 bar), per NFPA T2.6.1 MKF50 Rated Fatigue Pressure: 4000 psi (125 bar) MKF50 Bypass Setting: Cracking:: 40 psi (2.8 bar) MKF50 Bvon-bypassing model has a blocked bypass. MH560 Porting Head: Ductlie iron KF450 Element Change Clearance: 4.0° (103 mm) LC66 LC50 NOF30-05 LC50 NoF30-05 Fluid NOF-50-760 Compatibility Fluid: NOF-50-760 Compatibility Petroleum Based Fluids: All E-Media* and ASP* Media (synthetic) NMF30 Invert Brukions: All E-Media* and ASP* Media (synthetic) NMF30 Water Clyocis 3, 5, 10 and 25 µ Z-Media* and ASP* Media (synthetic) NMF30 RMF60 Skydro* 3, 5, 10 and 25 µ Z-Media* and all ASP* Media (synthetic) RMF60 Noter Glyoois 3, 5, 10 and 25 µ Z-Media* and all ASP* Media (synthetic) <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
Model No. of filter in photograph is CH01CC23SDS. KF50 Flow Rating: Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids Filter Max. Operating Pressure: 6000 psi (415 bar) KC50 Min. Yield Pressure: 15,500 psi (1070 bar), per NFPA T2.6.1 MKC50 Rated Fatigue Pressure: 4000 psi (276 bar), per NFPA T2.6.1-R1-2005 KC65 Temp. Range: -20°F to 225°F (23°C to 107°C) KC65 Bypass Setting: Cracking: 40 psi (2.8 bar) HS60 Full Flow: Tspi (5.2 bar) MHS60 Non-bypassing model has a blocked bypass. MHS60 Element Case: Steel LC60 Element Change Clearance: 4.0° (103 mm) LC35 LC35 LC50 NOF30-05 Type Fluid Appropriate Schroeder Media Fluid Invert Emulsions 10 and 25 µ Z-Media® and ASP® Media (synthetic) Fluid High Water Content All Z-Media® and ASP® Media (synthetic) MHF30 Water Glycols 3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic) MHF30 NMF50 Skydrol® 3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic) MHF60 High Water Content <td></td> <td></td> <td></td> <td></td> <td></td>					
TF50KC50Max. Operating Pressure:6000 psi (190 L/min) for 150 SUS (32 cSt) fluidsFilter Housing SpecificationsMKF50Max. Operating Pressure:15,500 psi (1070 bar), per NFPA T2.6.1MKC50Rated Fatigue Pressure:4000 psi (276 bar), per NFPA T2.6.1-R1-2005MKC50Bypass Setting:cracking: 40 psi (2.8 bar) Full Flow: 75 psi (5.2 bar) Non-bypassing model has a blocked bypass.MKF50MH560MKF50Bypass Setting:Cracking: 40 psi (2.8 bar) Full Flow: 75 psi (5.2 bar) Non-bypassing model has a blocked bypass.MH560Weight of CF60-9C:2.4.0 lbs. (10.9 kg)LC60Element Change Clearance:4.0* (103 mm)LC33LC50NOF30-053FUlid Forfo0-95Type FluidAppropriate Schroeder Media (synthetic)MOF50-760Miny Vater ContentAll E-Media (csynthetic)FIlid NOF50-760Petroleum Based FluidsAll E-Media (synthetic)MH560Mirg Water ContentAll Z-Media® and ASP® Media (synthetic)NMF30Mater Glycols3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)NMF30Mater Glycols3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MH560Phosphate EstersAll Z-Media® and all ASP® Media (synthetic)MH560Skydrol3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MH560Skydrol3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MH560Skydrol3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MH560High Wat	Model No. of filter in photo	graph is CF6	01CCZ3SD5.		
Flow Rating: Max. Operating Pressure: 6000 psi (415 bar)Filter Housing SpecificationsMKF50 MKC50Max. Operating Pressure: Min. Yield Pressure: 15,500 psi (1070 bar), per NFPA T2.6.1MKC50Rated Fatigue Pressure: 4000 psi (276 bar), per NFPA T2.6.1-R1-2005KC65Temp. Range: -20°F to 225°F (22°C to 107°C)K500Bypass Setting: Full Flow: T5 psi (5.2 bar) Non-bypassing model has a blocked bypass.MKF50Porting Head: Element Change Clearance: 4.0° (103 mm)KFH50LC60LC60Element Change Clearance: High Water Content High Water ContentAll E-Media (and ASP° Media (synthetic)High Water Content Water GlycolsAll Z-Media® and ASP° Media (synthetic)High Water Content Water GlycolsAll Z-Media® and ASP° Media (synthetic)Miny Water Content All Z-Media® and ASP Media (synthetic)MHF30Mater Glycols Skydrol3, 5, 10 and 25 µ Z-Media® and all ASP° Media (synthetic)Phosphate Esters Skydrol3, 5, 10 and 25 µ Z-Media® and all ASP° Media (synthetic)Phosphate Esters Skydrol3, 5, 10 and 25 µ Z-Media® and ASP° Media (synthetic)RetroSkydrolSkydrol3, 5, 10 and 25 µ Z-Media® and ASP° Media (synthetic)Phosphate Esters Skydrol3, 5, 10 and 25 µ Z-Media® and ASP° Media (synthetic)Phosphate Esters All Z-Media® and ASP® Media (synthetic) with H.5 seal delig (synthetic) with H.					KF50
Flow Rating: Max. Operating Pressure: 6000 psi (415 bar)Filter Housing SpecificationsMIKF50Max. Operating Pressure: Min. Yield Pressure: 15,500 psi (1070 bar), per NFPA T2.6.1MIKF50Rated Fatigue Pressure: 1000 psi (276 bar), per NFPA T2.6.1-R1-2005MIKC50Rated Fatigue Pressure: 1000 psi (276 bar), per NFPA T2.6.1-R1-2005KC65Temp. Range: 1000 psi (276 bar), per NFPA T2.6.1-R1-2005KC65Bypass Setting: 1000 pci (276 bar), per NFPA T2.6.1-R1-2005KFF50Weight of CF60-9C: 1000 pci (28 bar) Full Flow: 75 psi (5.2 bar) Non-bypassing model has a blocked bypass.MIH560Weight of CF60-9C: 1000 Element Change Clearance: 4.0" (103 mm)LC60LC35LC50NOF30-055Fluid Appropriate Schroeder Media 10 and 25 µ Z-Media® and ASP® Media (synthetic)MIH500High Water Content High Water Content Water Glycols 3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MIH50Phosphate Esters 8/II 2-Media® and ASP® Media (synthetic)MIH 15 seal designationMIF30Water Glycols 9, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MIH 15 seal designationMIF30RMF60Skydrol®3, 5, 10 and 25					TF50
Max. Operating Pressure:6000 psj (d15 bar)MKF50Min. Yield Pressure:15,500 psi (276 bar), per NFPA T2.6.1Housing SpecificationsRated Fatigue Pressure:4000 psi (276 bar), per NFPA T2.6.1-R1-2005KC65Temp. Range:-20°F to 225°F (-29°C to 107°C)KC65Bypass Setting:Cracking: 40 psi (2.8 bar) Full Flow: 75 psi (5.2 bar) Non-bypassing model has a blocked bypass.H560Porting Head:Ductile Iron Element Case:KFH50Weight of CF60-9C:24.0 lbs. (10.9 kg)LC60Element Change Clearance:4.0° (103 mm)LC35LC50NOF-50-760Compatibility FOF60-03Type FluidAppropriate Schroeder Media and ASP® Media (synthetic)Fluid NOF-50-760High Water ContentAll E-Media® and ASP® Media (synthetic)MH1 H (ER) seal designationHigh Water Giveois3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MMF H Seal Adeia (synthetic)Phosphate EstersAll Z-Media® and ASP® Media (synthetic)MMF H Seal Adeia (synthetic)Phosphate EstersAll Z-Media® and ASP® Media (synthetic)MMF H Seal Adeia (synthetic)Phosphate EstersAll Z-Media® and ASP® Media (synthetic)MMF H Seal Adeia (synthetic)Phosphate EstersAll Z-Media® and all ASP® Media (synthetic)MMF 50RMF60Skydrol®3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MMF 30RMF60Skydrol®3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MMF 40RMF60Skydrol®3, 5, 10 and 25 µ Z-Media® and all					КС50
Max. Operating Pressure:6000 psi (135 bar)HOUSINGMin. Yield Pressure:15,500 psi (1070 bar), per NFPA T2.6.1SpecificationsMKC50Rated Fatigue Pressure:4000 psi (276 bar), per NFPA T2.6.1-R1-2005KC65Temp. Range:-20°F to 225°F (-22°C to 107°C)KC65Bypass Setting:Cracking: 40 psi (2.8 bar) Full Flow: 75 psi (5.2 bar) Non-bypassing model has a blocked bypass.HS60Porting Head:Ductile Iron Element Case:KFH50Weight of CF60-9C:24.0 lbs. (10.9 kg)LC60Element Change Clearance:4.0° (103 mm)LC35LC35LC50NoF30-055Type FluidAppropriate Schroeder MediaPetroleum Based FluidsAll E-Media (cellulose), Z-Media® and ASP® Media (synthetic)High Water ContentAll Z-Media® and ASP® Media (synthetic)High Water Glycols3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)MhesiaS. 10 and 25 µ Z-Media® and ASP® Media (synthetic)Phosphate EstersAll Z-Media® and ASP® Media (synthetic)Phosphate EstersAll Z-Media® and ASP® Media (synthetic)Phosphate Esters3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)Phosphate Esters3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)Phosphate Esters3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)Mir60Skydrol?Skydrol?3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)Mir6014-CRZX10		_			MKF50
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Temp. Range:-20°F to 225°F (-29°C to 107°C)KC65Bypass Setting:Cracking: 40 psi (2.8 bar) Full Flow:H560Non-bypassing model has a blocked bypass.MH560Porting Head:Ductile iron Element Case:KFH50Weight of CF60-9C:24.0 lbs. (10.9 kg)LC60Element Change Clearance:4.0" (103 mm)LC35CrossLC35LC50Non-bypassing model has a blocked bypass.NOF30-05Petroleum Based FluidiAll E-Media (cellulose), Z-Media® and ASP® Media (synthetic)Fluid NOF-50-760Petroleum Based FluidisAll E-Media (cellulose), Z-Media® and ASP® Media (synthetic)High Water ContentHigh Water ContentAll Z-Media® and ASP® Media (synthetic)NMF30Numer Glycols3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)NMF60Phosphate EstersAll Z-Media® and All SP® Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil14-CRZX10				specifications	МКС50
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Non-bypassing model has a blocked bypass.MH4560Porting Head: Element Case:Ductile Iron Element Case:KFH50Weight of CF60-9C:24.0 lbs. (10.9 kg)LC60Element Change Clearance:4.0° (103 mm)LC35LC35LC50LC50Verght of Lement Change Clearance:4.0° (103 mm)LC35LC50Verght of Lement Change Clearance:Appropriate Schroeder MediaMH4560All E-Media (cellulose), Z-Media® and ASP® Media (synthetic)Petroleum Based FluidsAll E-Media (cellulose), Z-Media® and ASP® Media (synthetic)High Water ContentAll Z-Media® and ASP® Media (synthetic)Invert Emulsions10 and 25 µ Z-Media® (synthetic) and 10 µ ASP® Media (synthetic)Water Glycols3, 5, 10 and 25 µ Z-Media® and ASP® Media (synthetic)Phosphate EstersAll Z-Media® and ASP® Media (synthetic)MH560MMF60Skydrol3, 5, 10 and 25 µ Z-Media® and ASP® Media (synthetic) with H L5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil			Cracking: 40 psi (2.8 bar)		HS60
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Petroleum Based FluidsAll E-Media (cellulose), Z-Media® and ASP® Media (synthetic)CompatibilityHigh Water ContentAll Z-Media® and ASP® Media (synthetic)FOF60-03Invert Emulsions10 and 25 µ Z-Media® (synthetic) and 10 µ ASP® Media (synthetic)NMF30Water Glycols3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)RMF60Phosphate EstersAll Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation14-CRZX10	Type Fluid A	Appropriate	Schroeder Media	Fluid NO	F-50-760
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	Skydrol® 3	3, 5, 10 and 2	5 µ Z-Media® and all ASP® Media (synthetic) with H.5 seal	14	I-CRZX10
				20)-CR7X10
SCHROEDER INDUSTRIES 81				-	



CF60 Top-Ported Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

Element Performance **Information & Dirt Holding Capacity**

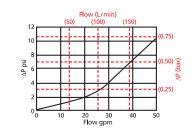
		tio Per ISO 4572/N Particle counter (APC) cal		o per ISO 16889 ated per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$	
CCZ1	<1.0	<1.0	<1.0	<4.0	4.2
CCZ3	<1.0	<1.0	<2.0	<4.0	4.8
CCZ5	2.5	3.0	4.0	4.8	6.3
CCZ10	7.4	8.2	10.0	8.0	10.0
CCZ25	18.0	20.0	22.5	19.0	24.0
CCZX3	<1.0	<1.0	<2.0	4.7	5.8

Element	DHC (gm)	
CCZ1	57	
CCZ3	58	
CCZ5	63	
CCZ10	62	
CCZ25	63	
CCZX3	26*	
	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

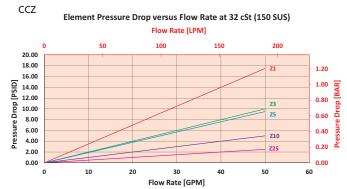
Top-Ported Pressure Filter CF6

$\triangle \bm{P}_{\mathsf{housing}}$

CF60 $\triangle \mathbf{P}_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



 $\triangle \mathbf{P}_{element}$



Pressure Drop Information Based on Flow Rate and Viscosity

$\triangle \mathbf{P}_{\text{filter}} =$	= ∆P _{housing}	+	$(\Delta \mathbf{P}_{element})$	*V _f)

Exercise:

Determine ΔP_{filter} at 30 gpm (113.6 L/min) for CF601CCZ10SD5 using 175 SUS (37.2 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 30 gpm. In this case, $\Delta P_{\text{housing}}$ is 4 psi (.28 bar) on the graph for the CF60 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 30 gpm. In this case, $\Delta P_{element}$ is 3 psi (.21 bar) according to the graph for the CCZ10 element.

Because the viscosity in this sample is 175 SUS (37.2 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\Delta \mathbf{P}_{\text{filter}}$, is calculated by adding $\Delta \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\Delta \mathbf{P}_{\text{element}} * V_f$). The $\Delta \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 4 \text{ psi} [.28 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 3 \text{ psi} [.21 \text{ bar}]$

V_f = 175 SUS (37.2 cSt) / 150 SUS (32 cSt) = 1.2 △ P_{filter} = 4 psi + (3 psi * 1.2) = 7.6 psi OR

△P_{filter} = .28 bar + (.21 bar * 1.2) = .53 bar

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{\text{element}} = \text{Flow Rate x } \Delta \mathbf{P}_{f}$ Plug this variable into the overall pressure drop equation.

Ele.	$\triangle \mathbf{P}$
CC3	0.22
CC10	0.13
CC25	0.03
CCAS3	0.20
CCAS5	0.19
CCAS10	0.10
CCZX3	0.29
CCZX10	0.26

CF60 Top-Ported Pressure Filter

Filter How to Build a Valid Model Number for a Schroeder CF60: BOX 3 BOX 4 BOX 5 BOX 6 BOX 7 BOX 8 BOX 9 BOX 1 BOX 2 Model CF60 Number Selection BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 BOX 7 BOX 8 BOX 9 = CF601CCZ10SD5 1CC Ζ S CF60 10 D5 BOX 1 BOX 2 BOX 3 Number nd Size of Filter Media Type and Size Elements Series 1CC Omit E Media (cellulose) CF60 Z = Excellement[®] Z-Media[®] (synthetic) CFN60 ZX = Excellement[®] Z- Media[®] (high collapse center tube) (Non-bypassing: requires ZX AS = Anti-Stat Media (synthetic) high collapse elements) BOX 5 BOX 6 BOX 4 Seal Porting Micron Rating Material Omit = Buna N S = SAE-20= 1 Micron (Z media) 1 V = Viton® $P = 1\frac{1}{4}$ " NPTF (AS, E, Z and ZX media) 3 = 3 Micron H = EPR $F = 1\frac{1}{4}$ " SAE 4-bolt 5 = 5 Micron (AS, Z, and ZX media) H.5 = Skydrol[®] compatibility flange code 62 10 = 10 Micron (AS,E, Z, and ZX media) B = ISO 228 G-1¹/₄" 25 = 25 Micron (E, Z and ZX media) BOX 7 BOX 8 **Dirt Alarm® Options** Options Omit = NoneOmit = None Visual D5 = Visual pop-up 25 = 25 psi bypass setting Visual 30 = 30 psi bypass setting with D8 = Visual w/ thermal lockout 50 = 50 psi bypass setting Thermal Lockout 60 = 60 psi bypass setting MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable 75 = 75 psi bypass setting MS5LC = Low current MS5 MS10 = Electrical w/ DIN connector (male end only) Box 2. Replacement element MS10LC = Low current MS10 part numbers are MS11 = Electrical w/ 12 ft. 4-conductor wire identical to contents Electrical MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only) of Boxes 2, 3, 4 and 5. E media (cellulose) MS12LC = Low current MS12 elements are only MS16 = Electrical w/ weather-packed sealed connector available with Buna MS16LC = Low current MS16 MS17LC = Electrical w/ 4 pin Brad Harrison male connector Box 5. H.5 seal designation MS5T = MS5 (see above) w/ thermal lockout MS5I CT = Low current MS5T following: EPR seals, MS10T = MS10 (see above) w/ thermal lockout stainless steel wire mesh Electrical on elements, and light MS10LCT = Low current MS10T with oil coating on housing MS12T = MS12 (see above) w/ thermal lockout Thermal exterior. Viton® is a MS12LCT = Low current MS12T registered trademark of Lockout MS16T = MS16 (see above) w/ thermal lockout DuPont Dow Elastomers.

MS16LCT = Low current MS16T

MS17LCT = Low current MS17T

MS13DCLCT = Low current MS13DCT

MS14DCLCT = Low current MS14DCT

MS13 = Supplied w/ threaded connector & light

MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)

MS13DCT = MS13 (see above), direct current, w/ thermal lockout

MS14DCT = MS14 (see above), direct current, w/ thermal lockout

Electrical

Electrical

Thermal

Lockout

Visual

Visual

with

Box 6. B porting option supplied with metric mounting holes.

Skydrol[®] is a registered trademark of Solutia Inc.

N seals.

includes the

NOTES:

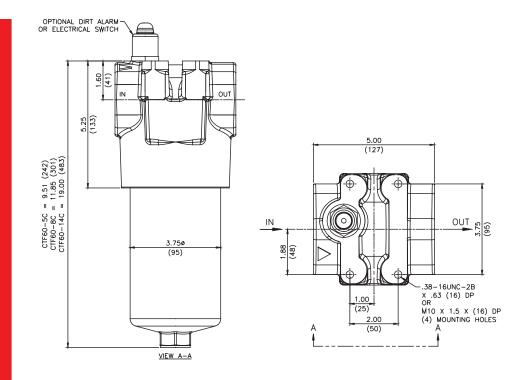
Box 8. Standard indicator setting for nonbypassing model is 50 psi unless otherwise specified.

SCHROEDER INDUSTRIES 84

Top-Ported Pressure FilterCTF60

	 Features and Benefits Top-ported high pressure filter High cyclic fatigue performance (6000 psi) Available with non-bypass option with high collapse element Offered in pipe, SAE straight thread, flange and ISO 228 porting Thread on bowl with optional drain plug for easy element service 	75 gpm <u>284 L/min</u> 6000 psi 415 bar	NF30 NFS30 YF30 CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60
Model No. of filter in photograph is CT	F608CTZ10F20D9.		VF60 LW60 KF30 KF50 TF50
Max. Operating Pressure: Min. Yield Pressure: Rated Fatigue Pressure: Temp. Range: Bypass Setting: Porting Head: Element Case: Weight of CTF60-5CT: CTF60-8CT:	18,000 psi (1241 bar), per NFPA T2.6.1 6000 psi (415 bar), per NFPA T2.6.1-R1-2005 (only with F20 4-bolt flange porting) -20°F to 225°F (-29°C to 107°C) Cracking: 50 psi (3.4 bar) Full Flow: 83 psi (5.7 bar) Non-bypassing model has a blocked bypass. Ductile Iron Steel 25 lbs. (11.4 kg) 29 lbs. (13.2 kg)	Filter Housing Specifications	KC50 MKF50 MKC50 KC65 HS60 MHS60 KFH50 LC60
CTF60-14CT: Element Change Clearance: Type Fluid Appropriate High Water Content All Z-Media® Invert Emulsions 10 and 25 µ Water Glycols 3, 5, 10 and	38 lbs. (17.3 kg) 4.0" (103 mm) Schroeder Media (synthetic) Z-Media [®] (synthetic)	Fluid NO Compatibility	LC35 LC50 OF30-05 F-50-760 OF60-03 NMF30 RMF60





Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

		tio Per ISO 4572/N article counter (APC) cal	Filtration Ratio	o per ISO 16889 ted per ISO 11171	
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x \ge 200$	$\beta_x(c) \ge 200$	$\beta_x(c) \geq 1000$
CTZ1/CTZX1	<1.0	<1.0	<1.0	<4.0	4.2
CTZ3/CTZX3	<1.0	<1.0	<2.0	<4.0	4.8
CTZ5/CTZX5	2.5	3.0	4.0	4.8	6.3
CTZ10/CTZX10	7.4	8.2	10.0	8.0	10.0
CTZ25/CTZX25	18.0	20.0	22.5	19.0	24.0

Element Performance Information & Dirt Holding Capacity

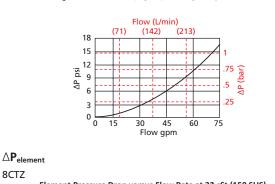
Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
5CTZ1	19	8CTZ1	31	14CTZ1	66
5CTZ3	16	8CTZ3	27	14CTZ3	57
5CTZ5	18	8CTZ5	30	14CTZ5	64
5CTZ10	21	8CTZ10	34	14CTZ10	72
5CTZ25	17	8CTZ25	28	14CTZ25	60
5CTZX1	14	8CTZX1	24	14CTZX1	53
5CTZX3	11	8CTZX3	18	14CTZX3	41
5CTZX5	10	8CTZX5	17	14CTZX5	38
5CTZX10	12	8CTZX10	20	14CTZX10	44
5CTZX25	11	8CTZX25	18	14CTZX25	39

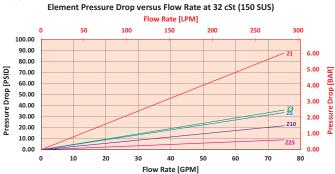
Element Collapse Rating:
Flow Direction:150 psid (10 bar) for standard elements
3000 psid (210 bar) for high collapse (ZX) versions
Outside InElement Nominal Dimensions:5CT : 2.64" (67 mm) O.D. x 4.88" (124 mm) long
8CT : 2.64" (67 mm) O.D. x 7.25" (184 mm) long
14CT : 2.64" (67 mm) O.D. x 14.38" (365 mm) long

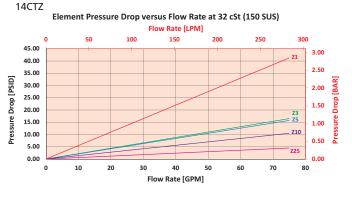
Top-Ported Pressure Filter CTF60



CTF60 $\triangle P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:







 $\triangle \mathbf{P}_{\text{filter}} = \triangle \mathbf{P}_{\text{housing}} + (\triangle \mathbf{P}_{\text{element}} * \mathsf{V}_f)$

Exercise:

Determine ΔP_{filter} at 50 gpm (189 L/min) for CTF608CTZ5S20D9 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 50 gpm. In this case, $\Delta P_{\text{housing}}$ is 7 psi (.48 bar) on the graph for the CTF60 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 50 gpm. In this case, $\Delta P_{\text{element}}$ is 22 psi (1.5 bar) according to the graph for the 8CTZ5 element.

Because the viscosity in this sample is 200 SUS (42.6 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\Delta \mathbf{P}_{\text{filter}}$, is calculated by adding $\Delta \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\Delta \mathbf{P}_{\text{element}} * V_f$). The $\Delta \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 7 \text{ psi} [.48 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 22 \text{ psi} [1.5 \text{ bar}]$

 $V_f = 200 \text{ SUS } (42.6 \text{ cSt}) / 150 \text{ SUS } (32 \text{ cSt}) = 1.3$

$$\Delta \mathbf{r}_{filter} = 7 \text{ psi} + (22 \text{ psi} * 1.3) = 35.6 \text{ psi}$$

OR

 $\Delta P_{\text{filter}} = .48 \text{ bar} + (1.5 \text{ bar} * 1.3) = 2.4 \text{ bar}$

Pressure Drop Information Based on Flow Rate and Viscosity

Note:

If your element is not graphed, use the following equation: $\Delta \mathbf{P}_{element} = \text{Flow Rate x } \Delta \mathbf{P}_{f} \text{ Plug}$ this variable into the overall pressure drop equation.

Ele.	${\boldsymbol \bigtriangleup} {\bf P}$	Ele.	$\Delta \mathbf{P}$	Ele.	$\Delta \mathbf{P}$
5CTZ1	1.87	5CTZX1	1.64	8CTZX1	1.00
5CTZ3	0.77	5CTZX3	0.96	8CTZX3	0.59
5CTZ5	0.72	5CTZX5	0.68	8CTZX5	0.41
5CTZ10	0.46	5CTZX10	0.46	8CTZX10	0.28
5CTZ25	0.19	5CTZX25	0.25	8CTZX25	0.15
14CTZX1	0.46	14CTZX3	0.27	14CTZX5	0.19
14CTZX10	0.13	14CTZX25	0.07		

CTF60 Top-Ported Pressure Filter

Filter Model Number Selection

CTF60 – –	BOX 4 BOX 5	BOX 6 BOX 7	
BOX 1 BOX 2 BOX 3 CTF60 - 8 - CTZ5	BOX 4 BOX 5		
BOX 1 BOX 2		BOX 3	BOX 4
Filter Element Series Length (in.)		Element Part Number	Seal Material
CTF60 5	CTZ1 = 1 µ	ا Excellement [®] Z-Media [®] (synthetic)	Omit = Buna N
8		Excellement [®] Z-Media [®] (synthetic)	V = Viton®
CTFN60 14		Excellement [®] Z-Media [®] (synthetic)	H = EPR
bypassing: requires ZX		μ Excellement [®] Z-Media [®] (synthetic)	
high collapse		µ Excellement® Z-Media® (synthetic) Excellement® Z-Media® (high collapse center tube)	
elements)		Excellement [®] Z-Media [®] (high collapse center tube)	
		Excellement [®] Z-Media [®] (high collapse center tube)	
		μ Excellement [®] Z-Media [®] (high collapse center tube)	
	CTZX25 = 25	μ Excellement [®] Z-Media [®] (high collapse center tube)	
Inlet Port		Dirt Alarm [®] Options	
P20 = 1 ¹ / ₄ " NPTF		Omit = None	
S20 = SAE-20	Visual	D9 = Visual pop-up	
F20 = 1¼" SAE 4-bolt flange		MS5SS = Electrical w/ 12 in. 18 gauge 4-conduc	tor cable
Code 62		MS5SSLC = Low current MS5	
B20 = ISO 228		MS10SS = Electrical w/ DIN connector (male end MS10SSLC = Low current MS10	oniy)
G-1¼"		MS1055LC = Low current MS10 MS11SS = Electrical w/ 12 ft. 4-conductor wire	
	Electrical	MS12SS= Electrical w/ 5 pin Brad Harrison conne	ctor (male and only)
		MS12SSE Electrical w/ 5 pin Brad Hamson conne MS12SSLC = Low current MS12	ctor (male end only)
		MS16SS = Electrical w/ weather-packed sealed co	nnector
		MS16SSLC = Low current MS16	
BOX 6			connector
		MS16SSLC = Low current MS16	connector
Options		MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of	connector
Options Omit = None		MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout	connector
Options Omit = None UU = Series 1215	Electrical	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T	connector
Options Omit = None UU = Series 1215 7/16" UNF Schroeder	with	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout	connector
Options Omit = None UU = Series 1215 7/16" UNF Schroeder Check Test		MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T	connector
Options Omit = None UU = Series 1215 7/16" UNF Schroeder	with Thermal	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T MS12SST = MS12 (see above) w/ thermal lockout	connector
Options Omit = None UU = Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream	with Thermal	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T MS12SST = MS12 (see above) w/ thermal lockout MS12SSLCT = Low current MS12T	connector
Options Omit = None UU = Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream) & downstream)	with Thermal	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T MS12SST = MS12 (see above) w/ thermal lockout MS12SSLCT = Low current MS12T MS16SSLCT = Low current MS12T MS16SSLCT = Low current MS16T MS17SSLCT = Low current MS16T	
Options Omit = None UU = Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream & downstream) DR = Drain on bowl	with Thermal Lockout Electrical	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T MS12SST = MS12 (see above) w/ thermal lockout MS12SSLCT = Low current MS12T MS16SSLCT = Low current MS12T MS16SSLCT = Low current MS16T MS17SSLCT = Low current MS16T MS13DC = Supplied w/ threaded connector & lighted	t
Options Omit = None UU = Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream) & downstream)	with Thermal Lockout	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T MS12SST = MS12 (see above) w/ thermal lockout MS12SSLCT = Low current MS12T MS16SSLCT = Low current MS12T MS16SSLCT = Low current MS16T MS17SSLCT = Low current MS17T MS13DC = Supplied w/ threaded connector & ligh MS14DC = Supplied w/ 5 pin Brad Harrison connect	t or & light (male end)
Options Omit = None UU = Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream & downstream) DR = Drain on bowl 30 = 30 psi bypass	with Thermal Lockout Electrical Visual	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T MS12SST = MS12 (see above) w/ thermal lockout MS12SSLCT = Low current MS12T MS16SST = MS16 (see above) w/ thermal lockout MS16SSLCT = Low current MS16T MS16SSLCT = Low current MS16T MS17SSLCT = Low current MS17T MS13DC = Supplied w/ threaded connector & ligh MS14DC = Supplied w/ 5 pin Brad Harrison connect MS13SSDCT = MS13 (see above), direct current, w/ th	t or & light (male end)
Options Omit = None UU = Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream & downstream) DR = Drain on bowl 30 = 30 psi bypass setting	vith Thermal Lockout Electrical Visual	MS16SSLC = Low current MS16 MS17SSLC = Electrical w/ 4 pin Brad Harrison male of MS5SST = MS5 (see above) w/ thermal lockout MS5SSLCT = Low current MS5T MS10SST = MS10 (see above) w/ thermal lockout MS10SSLCT = Low current MS10T MS12SST = MS12 (see above) w/ thermal lockout MS12SSLCT = Low current MS12T MS16SSLCT = Low current MS12T MS16SSLCT = Low current MS16T MS17SSLCT = Low current MS17T MS13DC = Supplied w/ threaded connector & ligh MS14DC = Supplied w/ 5 pin Brad Harrison connect	t or & light (male end) iermal lockout

NOTES:

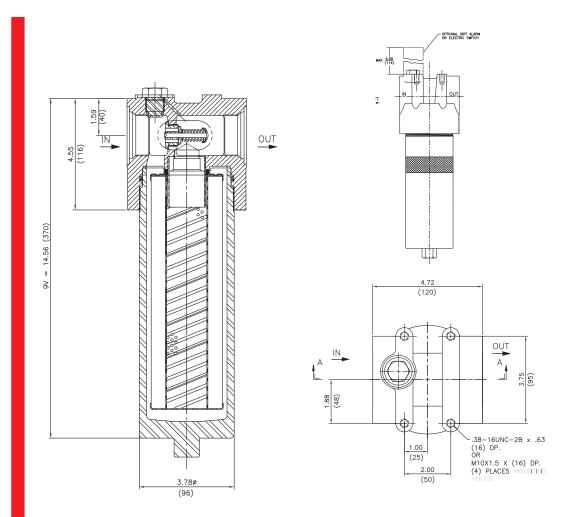
- Box 2. Replacement element part numbers are identical to contents of Boxes 2, 3 and 4.
- Box 4. Viton[®] is a registered trademark of DuPont Dow Elastomers.
- Box 5. B porting option supplied with metric mounting holes.
- Box 7. All Dirt Alarm[®] Indicators must be Stainless Steel. Standard indicator setting is 50 psi. For replacement indicators, contact the factory.

Top-Ported Pressure FilterVF60

Nodel No. of filter in photograph is No.	<section-header><section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	70 gpm 265 L/min 6000 psi 415 bar	NF30 NF530 YF30 CFX30 PLD CF40 DF40 PF40 RF550 RF60 CF60 CF60 CTF60 LW60 KF30 KF50
		Filter	KC50
Flow Rating:	Up to 70 gpm (265 L/min) for 150 SUS (32 cSt) fluids	Housing	MKF50
Max. Operating Pressure: Min. Yield Pressure:	6000 psi (415 bar) 15,500 psi (1070 bar), per NFPA T2.6.1	Specifications	МКС50
Rated Fatigue Pressure:	3300 psi (230 bar), per NFPA T2.6.1-R1-2005		KC65
Temp. Range:	-20°F to 225°F (-29°C to 107°C)		
Bypass Setting:	Cracking: 50 psi (3.5 bar)		HS60
Deuties: Used	Full Flow: 65 psi (4.5 bar)		MHS60
Porting Head: Element Case:	Ductile Iron Steel		KFH50
Weight of VF60-9V:	24.0 lbs. (10.9 kg)		LC60
Element Change Clearance:	4.0" (103 mm)		
			LC35
			LC50
		ſ	IOF30-05
	to Schroadar Madia	Fluid NC)F-50-760
Type Fluid Appropria Petroleum Based Fluids All E-Media		Compatibility	
High Water Content All Z-Media	-		FOF60-03
Invert Emulsions 10 and 25	μ Z-Media® (synthetic)		NMF30
Water Glycols 3, 5, 10 an			RMF60
	[®] (synthetic) with H (EPR) seal designation		
	d 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and eel wire mesh in element, and light oil coating on housing exterior)		4-CRZX10)-CRZX10



Top-Ported Pressure Filter



Metric dimensions in ().

Dimensions shown are inches (millimeters) for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

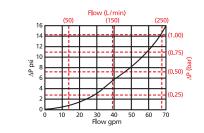
	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171			
Element	$\beta_x \ge 75$	$\beta_x \ge 100$	$\beta_x \ge 200$	$\beta_x(c) \ge 200$	$\beta_x(c) \ge 1000$		
9VZ1	<1.0	<1.0	<1.0	<4.0	4.2		
9VZ3	<1.0	<1.0	<2.0	<4.0	4.8		
9VZ5	2.5	3.0	4.0	4.8	6.3		
9VZ10	7.4	8.2	10.0	8.0	10.0		
9VZ25	18.0	20.0	22.5	19.0	24.0		
Element	DHC (gm)						
9VZ1	55						
9VZ3	57						
9VZ5	62						
9VZ10	60						
9VZ25	61						
Element Collapse Rating:		150 psid (10 bar) for standard elements					
Flow Direction:		Outside In					
Element Nominal 9V: 2.9" (75 mm) O.D. x 9.5" (240 mm) long Dimensions:							

Element Performance Information & Dirt Holding Capacity

Top-Ported Pressure Filter VF6

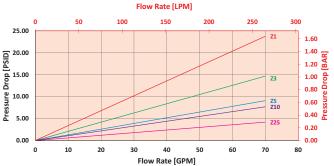
$\Delta \mathbf{P}_{\mathsf{housing}}$

VF60 $\triangle \mathbf{P}_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:









Pressure Drop Information Based on Flow Rate and Viscosity

$$\Delta \mathbf{P}_{\text{filter}} = \Delta \mathbf{P}_{\text{housing}} + (\Delta \mathbf{P}_{\text{element}} * \mathsf{V}_f)$$

Exercise:

Determine ΔP_{filter} at 40 gpm (151 L/min) for VF609VZ1S using 120 SUS (25.5 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 40 gpm. In this case, $\Delta P_{\text{housing}}$ is 6 psi (.42 bar) on the graph for the VF60 housing.

Use the element pressure curve to determine $\Delta \mathbf{P}_{element}$ at 40 gpm. In this case, $\Delta \mathbf{P}_{element}$ is 13 psi (.90 bar) according to the graph for the 9VZ1 element.

Because the viscosity in this sample is 120 SUS (25.5 cSt), we determine the **Viscosity Factor** (V_f) by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, $\Delta \mathbf{P}_{\text{filter}}$, is calculated by adding $\Delta \mathbf{P}_{\text{housing}}$ with the true element pressure differential, ($\Delta \mathbf{P}_{\text{element}} * V_f$). The $\Delta \mathbf{P}_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

 $\Delta \mathbf{P}_{\text{housing}} = 6 \text{ psi } [.42 \text{ bar}] \mid \Delta \mathbf{P}_{\text{element}} = 13 \text{ psi } [.90 \text{ bar}]$

V_f = 120 SUS (25.5 cSt) / 150 SUS (32 cSt) = .80 △ P_{filter} = 6 psi + (13 psi * .80) = 16.4 psi OR

 $\Delta \mathbf{P}_{filter} = .42 \text{ bar} + (..90 \text{ bar} * .80) = 1.14 \text{ bar}$

Note:

If your element is not graphed, use					
the following equa					
$\Delta \mathbf{P}_{element} = Flow R$	ate x $\Delta \mathbf{P}_f$ Plug				
this variable into th					
pressure drop equa	ation.				
Ele.	∧P				
9V3	0.32				

VF60 Top-Ported Pressure Filter

Model BOX 1 BOX 2 BOX Number VF60 - - Selection - -	<u> </u>	BOX 5 BOX 6					
BOX 1 BOX 2 BOX							
BOX 1 BOX 2		BOX 3	BOX 4				
Filter Element Series Length (i		Element Size and Media	Seal Material				
VF60 9	V3 V10 VZ1 VZ3 VZ5 VZ10 VZ25	 B = V size 3 μ E media (cellulose) V size 10 μ E media (cellulose) V size 1 μ Excellement[®] Z-Media[®] (synthetic) V size 3 μ Excellement[®] Z-Media[®] (synthetic) V size 5 μ Excellement[®] Z-Media[®] (synthetic) V size 10 μ Excellement[®] Z-Media[®] (synthetic) V size 25 μ Excellement[®] Z-Media[®] (synthetic) V size 25 μ Excellement[®] Z-Media[®] (synthetic) V size 150 μ M media (reusable metal) 	Omit = Buna N V = Viton® H = EPR				
BOX 5		BOX 6					
Inlet Port	Dirt Alarm [®] Options						
$P = 1\frac{1}{4}$ " NPTF	Visual	Omit = None D5 = Visual pop-up					
S = SAE-20	Visual with	D8 = Visual pop-up D8 = Visual w/ thermal lockout					
B = ISO 228 G-1¼"	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/ 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 locko MS5LCT = Low current MS5T MS10T = MS10 (see above) w/ thermal lock MS10LCT = Low current MS10T MS12T = MS12 (see above) w/ thermal lock MS12LCT = Low current MS12T MS16T = MS16 (see above) w/ thermal lock MS16LCT = Low current MS16T MS17LCT = Low current MS17T	out out				
		MS13DC = Supplied w/ threaded connector 8	k light				
	Visual MS14DC = Supplied w/ 5 pin Brad Harrison connector & light						
Replacement element part numbers are a combination of Boxes 2, 3, and 4.	Electrical Visual	(male end) MS13DCT = MS13 (see above), direct current, MS13DCLCT = Low current MS13DCT	w/ thermal lockout				
Example: 9VZ1V ynthetic media elements are only available with Viton teals.	with Thermal Lockout	with Thermal MS14DCT = MS14 (see above), direct current, w/ thermal lockout					

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Dow Elastomers.

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