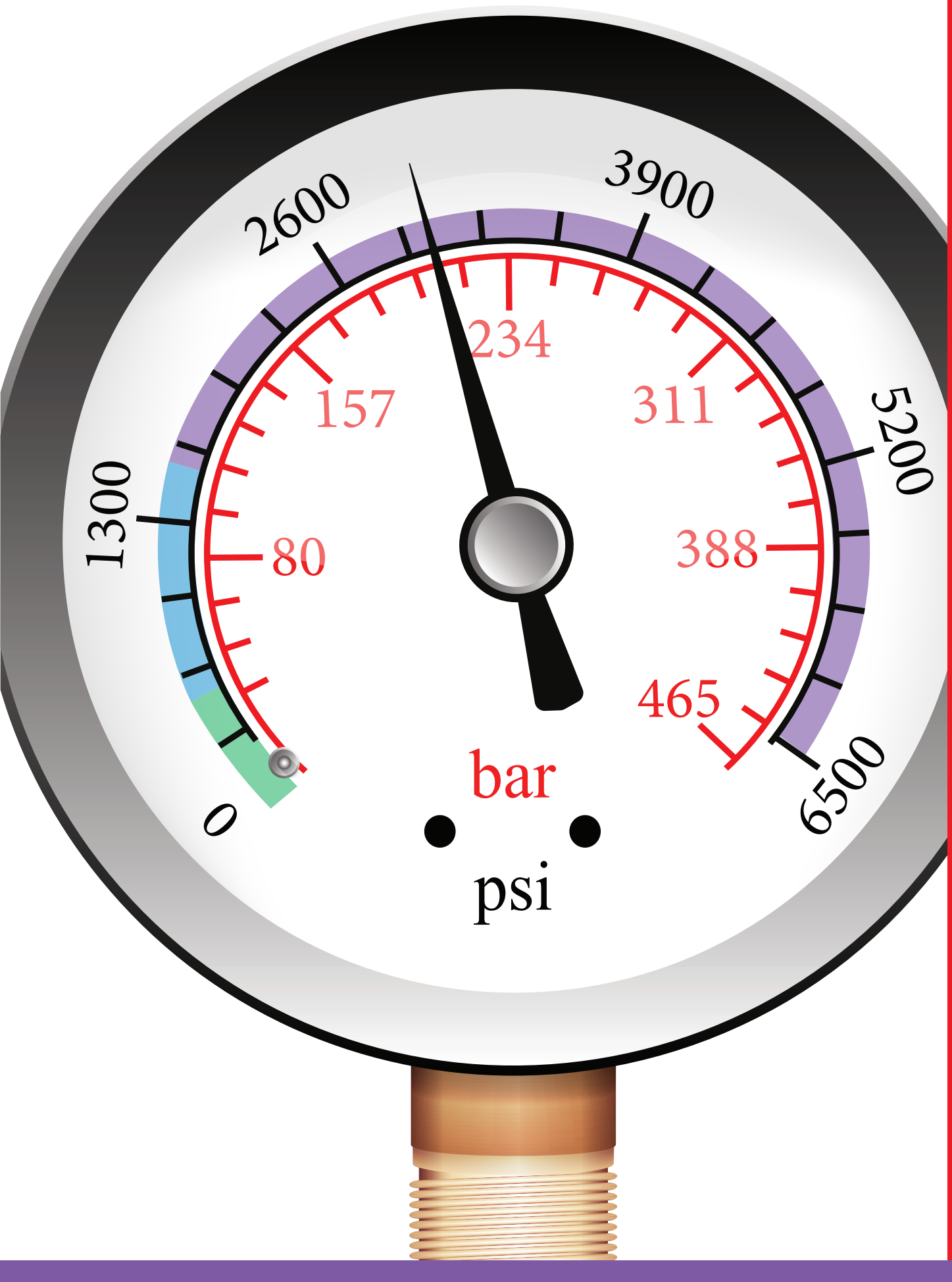


Section 3:
above 1500 psi

HIGH PRESSURE FILTERS

v.040224

Section 3 High Pressure Filters Selection Guide

High Pressure Filters (1500 - 6500 psi)

	Pressure psi (bar)	Flow gpm (L/min)	Element Length/Size	Page
Top-Ported High Pressure Filters				
NF30	3000 (210)	20 (75)	N, NN	49
NFS30	3000 (210)	20 (75)	N, NN	53
YF30	3000 (210)	25 (100)	4Y, 8Y	57
CFX30	3000 (210)	30 (115)	CC, DD	61
PLD	3000 (210)	100 (380)	DV	65
CF40	4000 (275)	45 (170)	C, CC	69
DF40	4000 (275)	30 (113)	C, CC	69
PF40	4000 (275)	50 (190)	5H, 9H	73
RFS50	5000 (345)	30 (115)	8R	77
RF60	6000 (415)	30 (115)	8R	81
CF60	6000 (415)	50 (190)	CC	85
CTF60	6000 (415)	75 (284)	5CT, 8CT, 14CT	89
VF60	6000 (415)	70 (265)	9V	93
LW60	6000 (415)	300 (1135)	39ZP	97
Base-Ported High Pressure Filters				
KF30 QUALITY PROTECTION	3000 (210)	100/150 (380/570)	K, KK, 27K	101
KF50 QUALITY PROTECTION	5000 (345)	100/150 (380/570)	K, KK, 27K	101
TF50	5000 (345)	40 (150)	A, CC	105
KC50 QUALITY PROTECTION	5000 (345)	100/150 (380/570)	K, KK, 27K	109
MKF50	5000 (345)	200 (760)	K, KK, 27K	113
MKC50	5000 (345)	200 (760)	K, KK, 27K	113
KC65 QUALITY PROTECTION	6500 (450)	100 (380)	K, KK, 27K	117
MKC65	6000 (413)	300 (1136)	K, KK, 27K	121
Hydrostatic (Bidirectional) Flow High Pressure Filters				
HS60	6000 (415)	120 (450)	13HZ	125
MHS60	6000 (415)	120 (450)	13HZ	125
KFH50 (Base-Ported)	5000 (345)	70 (265)	K, KK, 27K	129
In-Line Filters				
LC60	6000 (415)	8 (30)	SSD	133
LC35	3500 (241)	15 (57)	BS	135
LI50	5000 (345)	35 (130)	IZ	137
LC50	5000 (345)	9 (35)	5H	141
Servo Protection (Sandwich) Filters DO7, DO3, Moog, Parker & Vickers				
NOF30-05	3000 (210)	12 (45)	NN	143
NOF50-760	5000 (345)	15 (57)	SV	147
FOF60-03	6000 (415)	12 (45)	F	151
Manifold Mount Filter Kits (Bowls & Installation Drawings)				
NMF30	3000 (210)	20 (75)	NN	155
RMF60	6000 (415)	30 (115)	8R	157
Cartridge Elements for use in Manifold Applications				
14-CRZX10	3000 (210)	6 (23)	—	159
20-CRZX10	3000 (210)	12 (45)	—	160

Top-Ported Pressure Filter NF30

Model No. of filter in photograph is NF301NZ10SD5.

Features and Benefits

- Top-ported pressure filter
- All aluminum assembly
- Available with non-bypass option with high collapse element
- Offered in pipe, SAE straight thread and ISO 228 porting
- Same day shipment model available
- Available with quality protected Lock & Key Elements (NFLK30)

20 gpm
75 L/min
3000 psi
210 bar

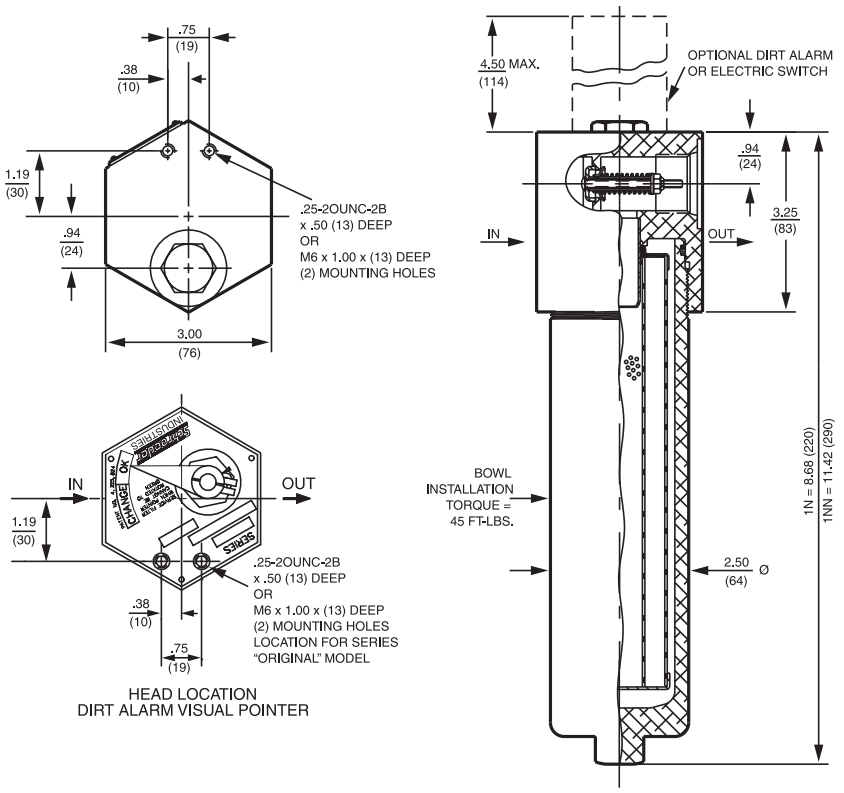
Filter Housing Specifications

Flow Rating:	Up to 20 gpm (75 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (210 bar)
Min. Yield Pressure:	10,000 psi (690 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	2400 psi (165 bar), per NFPA T2.6.1
Temp. Range:	-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.
Porting Head: Element Case:	Aluminum Aluminum
Weight of NF30-1N: Weight of NF30-1NN:	3.4 lbs. (1.5 kg) 4.4 lbs. (2.0 kg)
Element Change Clearance:	4.50" (115 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E Media (cellulose), Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and 3, 5 and 10 µ ASP® Media (synthetic)

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.

Element Performance Information & Dirt Holding Capacity

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_x(c) \geq 200$	$ß_x(c) \geq 1000$
NZ1 / NNZ1 / NLKZ1 / NNLKZ1	<1.0	<1.0	<1.0	<4.0	4.2
NZ3 / NNZ3 / NLKZ3 / NNLKZ3	<1.0	<1.0	<2.0	<4.0	4.8
NZ5 / NNZ5 / NLKZ5 / NNLKZ5	2.5	3.0	4.0	4.8	6.3
NZ10 / NNZ10 / NLKZ10 / NNLKZ10	7.4	8.2	10.0	8.0	10.0
NZ25 / NNZ25 / NLKZ25 / NNLKZ25	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 / NLKZ1	12	NNZ3 / NNLKZ3	16
NZ3 / NLKZ3	12	NNZ5 / NNLKZ5	18
NZ5 / NLKZ5	12	NNZ10 / NNLKZ10	15
NZ10 / NLKZ10	11	NNZ25 / NNLKZ25	15
NZ25 / NLKZ5	11	NNZX3	11*
NNZ1 / NNLKZ1	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

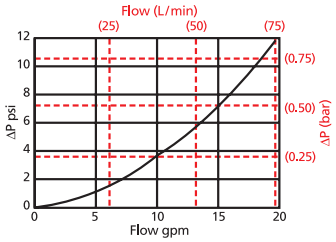
Flow Direction: Outside In

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

Pressure Drop Information
Based on Flow Rate and Viscosity

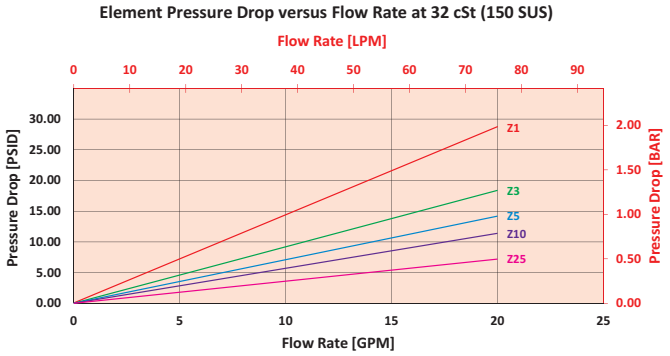
$\Delta P_{housing}$

NF30 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

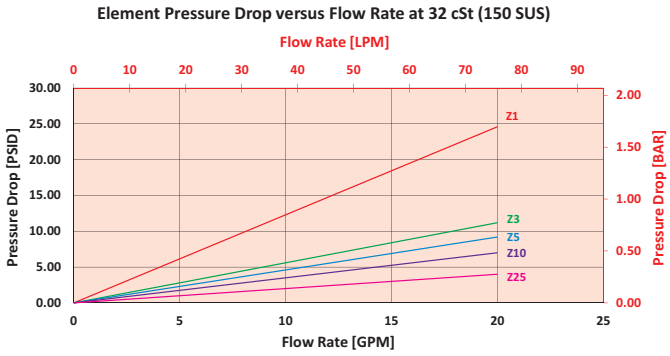


$\Delta P_{element}$

1NZ / NLKZ



1NNZ / NNLKZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

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 $\Delta P_{housing}$ at 15 gpm. In this case, $\Delta P_{housing}$ is 7 psi (.48 bar) according to the graph for an NF30 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 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 7 psi [0.48 bar] | $\Delta P_{element}$ = 8 psi [0.55 bar]

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

ΔP_{filter} = 7 psi + (8 psi * 1.1) = 15.8 psi

OR

ΔP_{filter} = .48 bar + (.55 bar * 1.1) = 1.1 bar

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

Ele.	ΔP
N3	1.10
N10	0.17
N25	0.10
NAS3	0.92
NAS5	0.71
NAS10	0.57

NF30 Top-Ported Pressure Filter

Filter Model Number Selection

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
NF30 –	–	–	–	–	–	–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	
NF30 –	1N –	Z –	10 –	–	S –	–	D5 –	–	= NF301NZ10SD5

BOX 1

Filter Series
NF30
NFN30 (Non-bypassing: requires ZX high collapse elements)
NFLK30

BOX 2

Number & Size of Elements	
1	N = Single Length NN = Double Length
1	NLK = Single Length Lock & Key NNLK = Double Length Lock & Key

BOX 3

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

BOX 4

Micron Rating	
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)

BOX 5

Seal Material	
Omit	= Buna N
V	= Viton®
W	= Buna N, Anodized Aluminum parts

BOX 6

Porting	
B	= ISO228 G-¾"
P	= ¾" NPTF
S	= SAE-12

BOX 7

Bypass	
Omit	= 40 PSI bypass
50	= 50 PSI Bypass
X	= Blocked bypass

(omit box 7 when NFN30 is selected)

BOX 8

Dirt Alarm® Options		
	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 9

Additional Options	
Omit	= None
G792	= 7/16"-20 UNF drain on housing

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 7. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Manifold Mounted Pressure Filter NFS30

Model No. of filter in photograph is NFS301NZ3OD5.

Features and Benefits

- Manifold mounted pressure filter
- Offered in square head conventional subplate porting
- Direct mounting to inlet port on customer's manifold

20 gpm
75 L/min
3000 psi
210 bar

Filter Housing Specifications

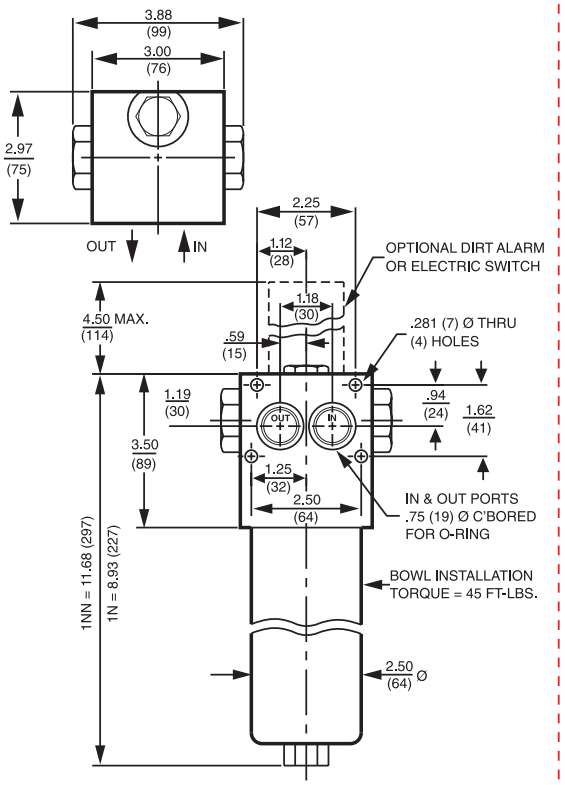
Flow Rating:	Up to 20 gpm (75 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (210 bar)
Min. Yield Pressure:	10,000 psi (690 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	2400 psi (165 bar), per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 85 psi (5.9 bar)
Porting Head: Element Case:	Aluminum Aluminum
Weight of NFS30-1N: Weight of NFS30-1NN:	3.6 lbs. (1.6 kg) 4.3 lbs. (2.0 kg)
Element Change Clearance:	4.50" (115 mm)

Fluid Compatibility

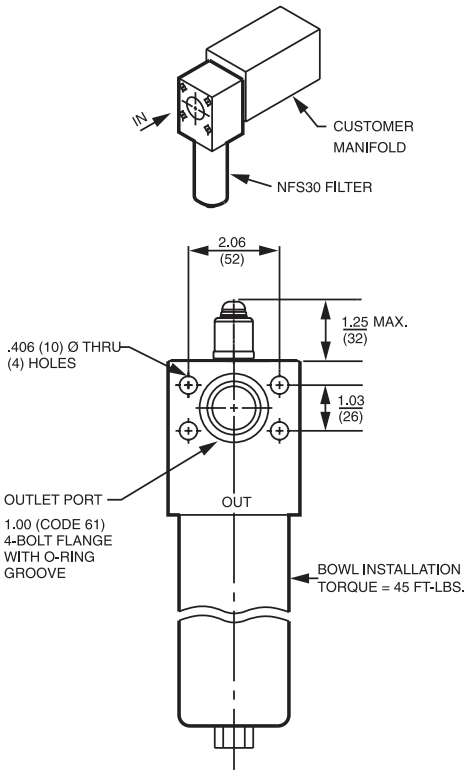
Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E Media (cellulose), Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and 3, 5 and 10 µ ASP® Media (synthetic)

NFS30 Manifold Mounted Pressure Filter

NFS30 WITH "O" PORT CONFIGURATION



NFS30 WITH PO, SO, FO PORT CONFIGURATIC



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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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

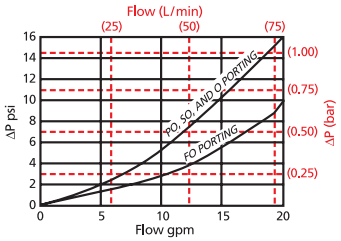
Flow Direction: Outside In

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

Pressure Drop Information
Based on Flow Rate and Viscosity

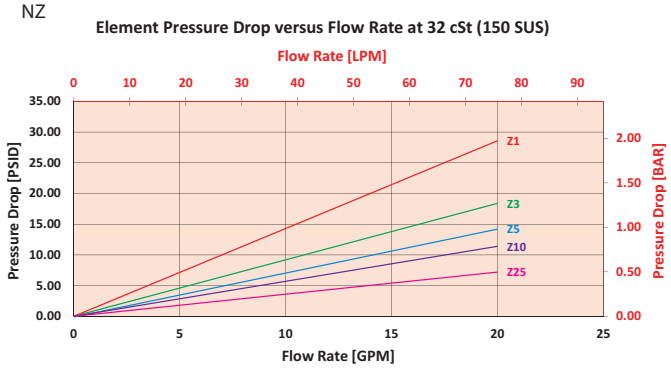
$\Delta P_{housing}$

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

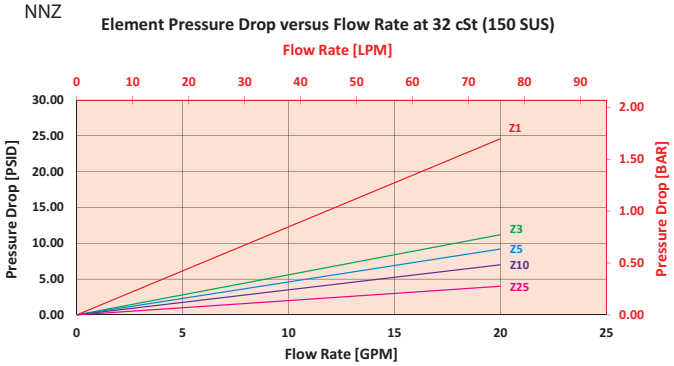


$\Delta P_{element}$

NZ



NNZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 15 gpm (57 L/min) for NFS301NZ10SO using 175 SUS (37.2 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 15 gpm. In this case, $\Delta P_{housing}$ 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_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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 10 psi [.69 bar] | $\Delta P_{element}$ = 8 psi [.55 bar]

V_f = 175 SUS (37.2 cSt) / 150 SUS (32 cSt) = 1.2

ΔP_{filter} = 10 psi + (8 psi * 1.2) = 19.6 psi

OR

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

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

Ele.	ΔP	Ele.	ΔP
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 – Filter Series

NFS30
NFSN30 (Non-bypassing: requires ZX high collapse elements)

BOX 2 – Number & Size of Elements

1	N = Single Length
	NN = Double Length

BOX 3 – Media Type

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

BOX 4 – Micron Rating

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)

BOX 5 – Seal Material

Omit	= Buna N
V	= Viton®
W	= Buna N, Anodized Aluminum parts

BOX 6 – Porting

SO	= SAE-12
PO	= ¾" NPTF
FO	= 1" SAE 4-bolt flange Code 61
O	= Manifold

BOX 7 – Bypass

Omit	= 40 PSI Bypass
50	= 50 PSI Bypass
X	= Blocked bypass

(Omit box 7 if NFSN30 is used)

BOX 8 – Dirt Alarm® Options

	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13 =	Supplied w/ threaded connector & light
	MS14 =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

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.
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Box 6. For option O, O-rings included; fastening hardware not included.

box 7. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Box 8. For options SO, PO and FO, available dirt alarm is D only.

Top-Ported Pressure Filter YF30

Model No. of filter in photograph is YF308YZ10SD5.

Features and Benefits

- Top-ported pressure filter
- All aluminum assembly
- Meets HF2 automotive standards
- Offered in straight thread porting
- Optional drain plug in bowl for easy servicing
- Available with non-bypass option

25 gpm
100 L/min
3000 psi
210 bar

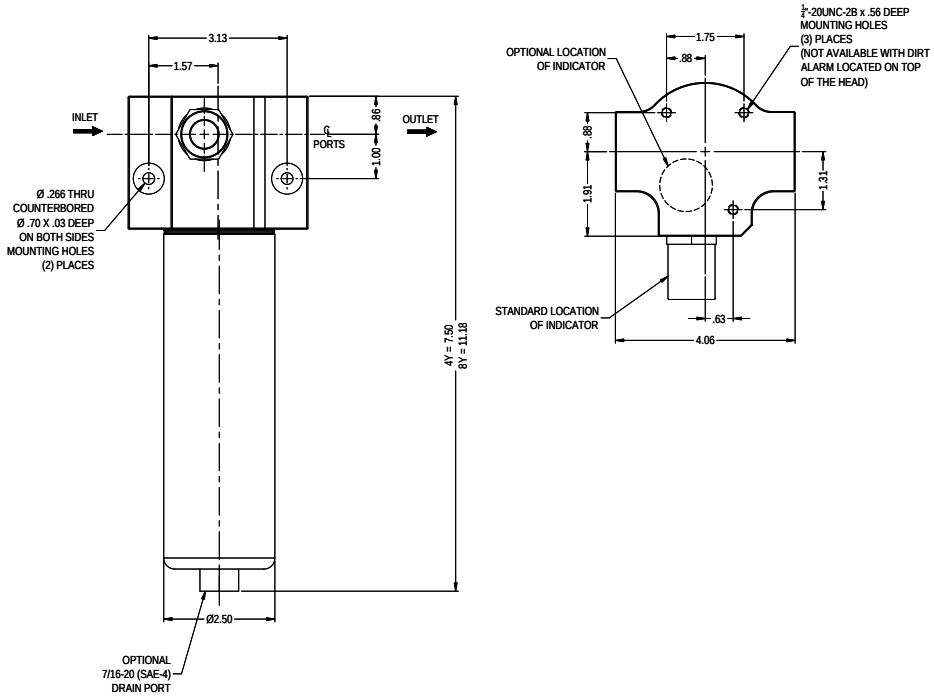
Filter Housing Specifications

Flow Rating:	Up to 25 gpm (100 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (210 bar)
Min. Yield Pressure:	10,000 psi (690 bar), per NFPA T2.6.1
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)
Bypass Setting:	Cracking: 50 psi (3.4 bar) Non-bypassing model has a blocked bypass.
Porting Head: Element Case:	Aluminum Aluminum
Weight of YF30-4Y: Weight of YF30-8Y:	3.75 lbs. (1.70 kg) 4.25 lbs. (1.93 kg)
Element Change Clearance:	4.50" (115 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E Media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)

YF30 Top-Ported Pressure Filter



NOTES:
1.) BOWL INSTALLATION TORQUE = 45 FT/LBS.

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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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

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

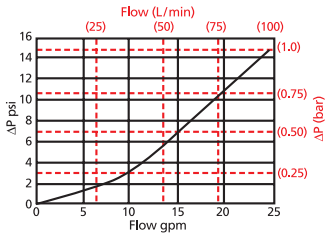
Flow Direction: Outside In

Element Nominal Dimensions: 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

Pressure Drop Information
Based on Flow Rate and Viscosity

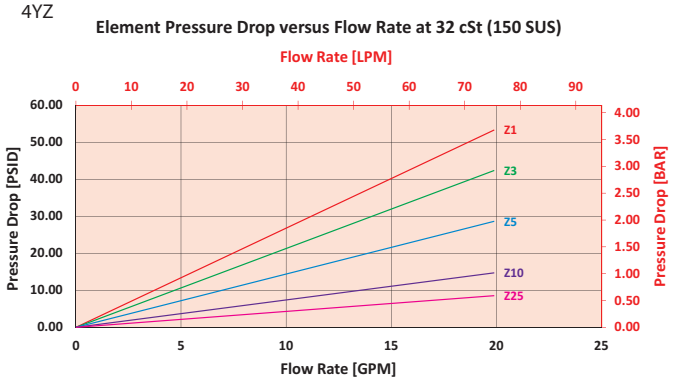
$\Delta P_{housing}$

YF30 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

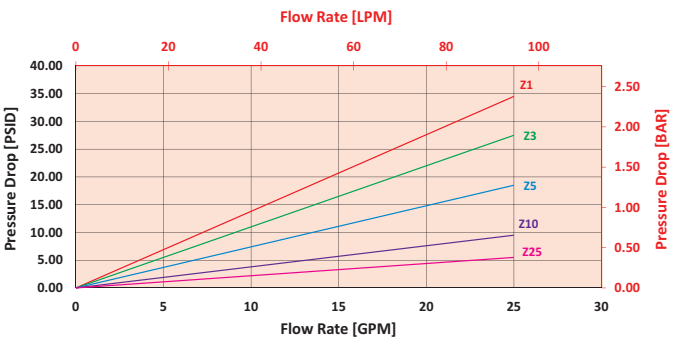


$\Delta P_{element}$

4YZ



8YZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 10 gpm (37.9 L/min) for YF304YZ10WSDRD5 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 10 gpm. In this case, $\Delta P_{housing}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 3 psi [.21 bar] | $\Delta P_{element}$ = 8 psi [.55 bar]

V_f = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3

ΔP_{filter} = 3 psi + (8 psi * 1.3) = 13.4 psi

OR

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

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

Ele.	ΔP	Ele.	ΔP
4YZX5	1.65	8YZX5	0.92
4YZX10	0.09	8YZX10	0.63

YF30 Top-ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder YF30:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
YF30 –	–	–	–	–	–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
YF30 –	4 –	YZ10 –	W –	S –	–	DR –	D5	= YF304YZ10WSDRD5

BOX 1 – Filter Series

- YF30
- YFN30 (Non-by-passing: requires ZX high collapse elements)

BOX 2 – Element Length (in)

- 4
- 8

BOX 3 – Element Size and Media

- YZ1 = Y size 1 µ Excellement® Z-Media® (synthetic)
- YZ3 = Y size 3 µ Excellement® Z-Media® (synthetic)
- YZ5 = Y size 5 µ Excellement® Z-Media® (synthetic)
- YZ10 = Y size 10 µ Excellement® Z-Media® (synthetic)
- YZ25 = Y size 25 µ Excellement® Z-Media® (synthetic)
- YZX5 = Y size 5 µ Excellement® Z-Media® (high collapse center tube)
- YZX10 = Y size 10 µ Excellement® Z-Media® (high collapse center tube)

BOX 4 – Seal Material

- Omit = Buna N
- V = Viton®
- W = Buna N, Anodized Aluminum parts

BOX 5 – Inlet Port

- S = SAE-12
- O = Subplate (contact factory)

BOX 6 – Dirt Alarm® Location

- Omit = Side of filter head
- T = Top of filter head

BOX 7 – Optional Bowl Drain

- Omit = No drain
- DR = Drain

BOX 8 – Dirt Alarm® Options

	Omit =	None
Visual	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are combination of Boxes 2,3, and 4. Example 4YZ10V

Box 4. For options V and W, all aluminum parts are anodized. Viton® is a registered trademark of DuPont Dow Elastomers.

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

Non-Bypassing Pressure Filter CFX30

Features and Benefits

- Top-ported non-bypassing pressure filter
- Unique valve eliminates need for high collapse elements, valve begins to close off flow at 50 psi: Differential Pressure and fully closes off flow by 80 psi: DP. This ensures that no un-filtered flow is allowed down stream to critical components.
- Offered in pipe, SAE straight thread and ISO 228 porting
- Integral inlet and outlet female test points option available

30 gpm
115 L/min
3000 psi
210 bar

Model No. of filter in photograph is CFX301CC10SD5.

Filter Housing Specifications

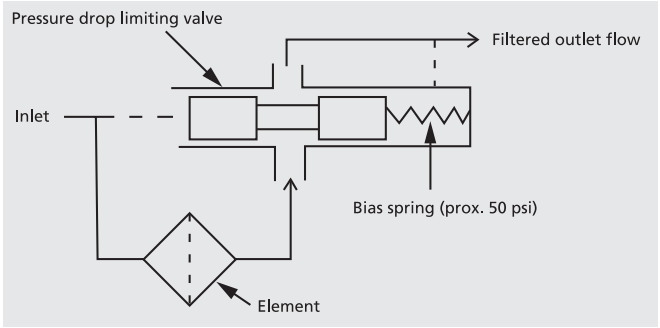
Flow Rating:	Up to 30 gpm (115 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (210 bar)
Min. Yield Pressure:	12,000 psi (828 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	1800 psi (125 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Non-Bypassing
Porting Head: Element Case:	Aluminum Steel
Weight of CFX30-1CC:	19.5 lbs. (8.9 kg)
Element Change Clearance:	4.00" (100 mm)

Fluid Compatibility

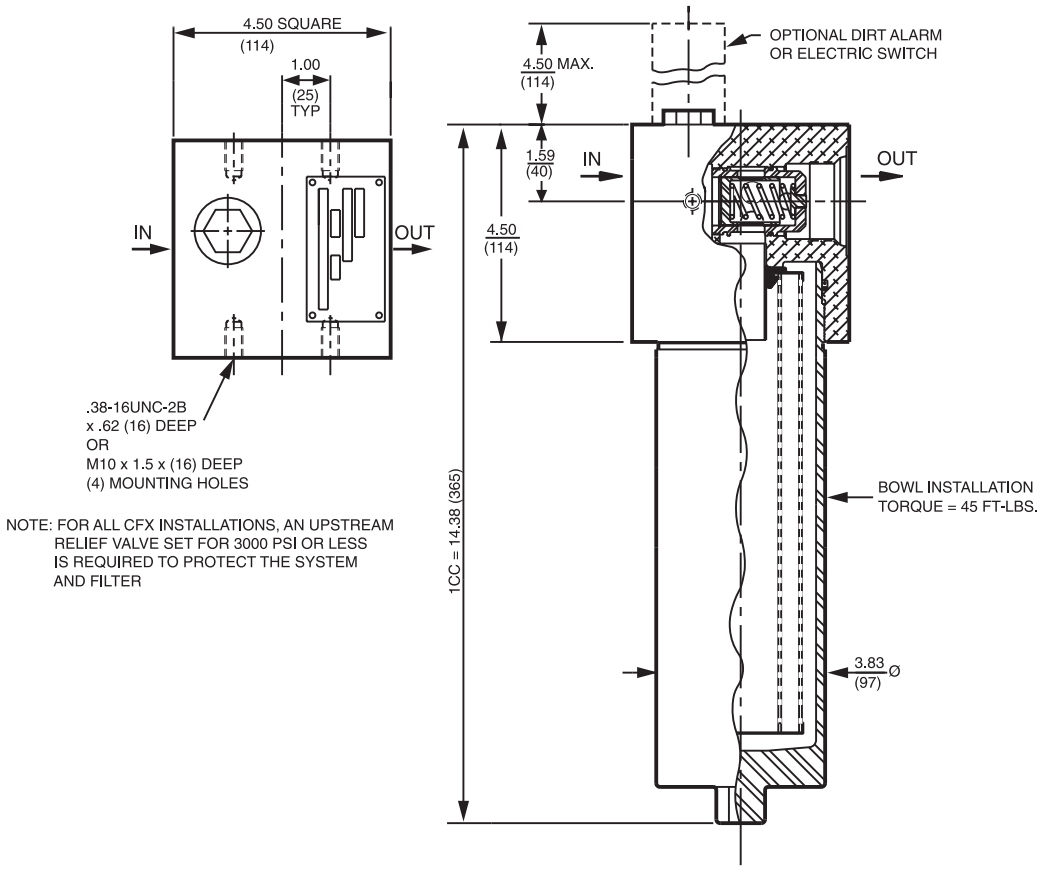
Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E Media (cellulose), Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and 3, 5 and 10 µ ASP® Media (synthetic)
Phosphate Esters	All Z-Media® and ASP® media (synthetic) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

Unique Non-Bypassing Filtration: A Better Way That Does Not Require High Crush Elements

Schroeder's CFX30 series is a non-bypassing filter that incorporates the use of a unique pressure drop limiting valve that maintains the differential pressure across the element below the element's collapse pressure rating. As the element accumulates dirt, the pressure drop increases across the element and, therefore, across the spool of the valve. At 50 psi, the spool begins to move, restricting flow as needed to prevent the pressure drop from increasing further and compromising element integrity. This design allows the CFX30 filters to safely use the lower cost standard elements, eliminating the need for expensive high-crush replacement elements.



CFX30 Non-Bypassing Pressure Filter



NOTE: FOR ALL CFX INSTALLATIONS, AN UPSTREAM RELIEF VALVE SET FOR 3000 PSI OR LESS IS REQUIRED TO PROTECT THE SYSTEM AND 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

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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

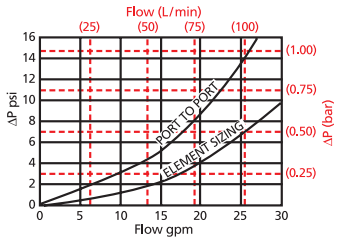
Flow Direction: Outside In

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

Pressure Drop Information
Based on Flow Rate and Viscosity

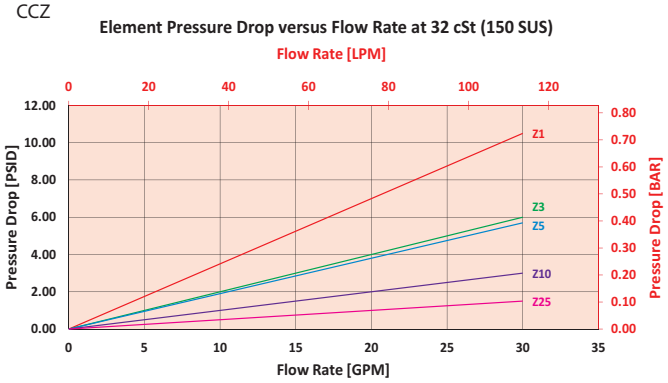
$\Delta P_{housing}$

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



$\Delta P_{element}$

CCZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 15 gpm (57 L/min) for CFX301CZ5SD5 using 100 SUS (21.3 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 15 gpm. In this case, $\Delta P_{housing}$ 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 5 psi [.34 bar] | $\Delta P_{element}$ = 3 psi [.21 bar]

V_f = 100 SUS (21.3 cSt) / 150 SUS (32 cSt) = .67

ΔP_{filter} = .34 psi + (.21 psi * .67) = .48 psi

OR

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

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

Ele.	ΔP
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 Model Number Selection

How to Build a Valid Model Number for a Schroeder CFX30:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
CFX30 –		–		–		–		–		–		–	

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
CFX30 –	CC –	Z –	5 –		–	S –		–	D5	= CFX30CCZ5SD5

BOX 1

Filter Series
CFX30

BOX 2

Number & Size of Elements	
1	C = Single Length
	CC = Double Length

BOX 3

Media Type	
Omit	= E Media (cellulose)
Z	= Excellement® Z-Media® (synthetic)
AS	= Anti-Stat Media (synthetic)
M	= Media (reusable metal mesh)

BOX 4

Micron Rating	
1	= 1 Micron (Z-Media®)
3	= 3 Micron (E, Z, AS Media)
5	= 5 Micron (Z, AS Media)
10	= 10 Micron (E, M, Z, AS Media)
25	= 25 Micron (E & Z-Media®)

BOX 5

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

BOX 6

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

BOX 7

Options	
Omit	= None
L	= Two ¼" NPTF inlet and outlet female test ports
U	= Schroeder Check 7/16"-20 UNF Test Point installation in cap (upstream)

BOX 8

Dirt Alarm® Options		
	Omit	= None
Visual	D5	= Visual pop-up
Visual with Thermal Lockout	D8	= Visual w/ thermal lockout
Electrical	MS5	= Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC	= Low current MS5
	MS10	= Electrical w/ DIN connector (male end only)
	MS10LC	= Low current MS10
	MS11	= Electrical w/ 12 ft. 4-conductor wire
	MS12	= Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC	= Low current MS12
	MS16	= Electrical w/ weather-packed sealed connector
	MS16LC	= Low current MS16
	MS17LC	= Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T	= MS5 (see above) w/ thermal lockout
	MS5LCT	= Low current MS5T
	MS10T	= MS10 (see above) w/ thermal lockout
	MS10LCT	= Low current MS10T
	MS12T	= MS12 (see above) w/ thermal lockout
	MS12LCT	= Low current MS12T
	MS16T	= MS16 (see above) w/ thermal lockout
	MS16LCT	= Low current MS16T
	MS17LCT	= Low current MS17T
Electrical Visual	MS13DC	= Supplied w/ threaded connector & light
	MS14DC	= Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT	= MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT	= Low current MS13DCT
	MS14DCT	= MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT	= Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. E media (cellulose) elements are only available with Buna N seals.

Box 5. For options H, V, W, and H.5, all aluminum parts are anodized. H.5 seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior. Viton® is a registered trademark of DuPont Dow Elastomers.
Skydrol® is a registered trademark of Solutia Inc.

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

High Pressure Filter PLD

Model No. of filter in photograph is PLD10DVZ3VF24.

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

100 gpm
380 L/min
3000 psi
210 bar

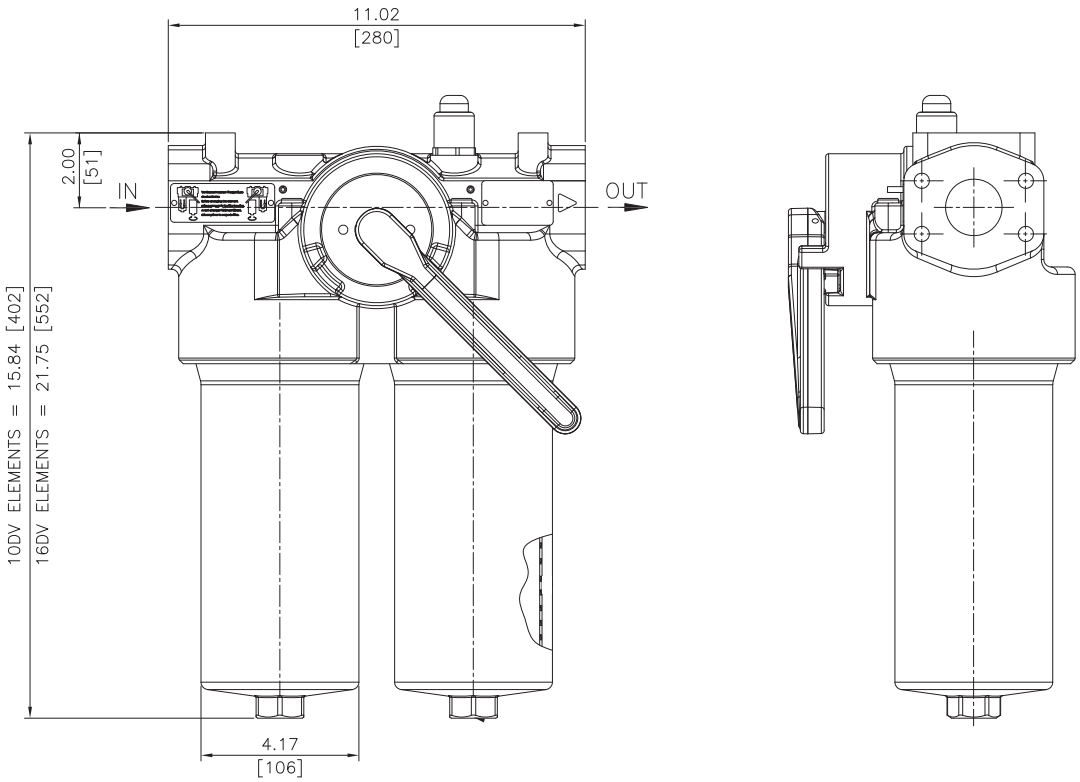
Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (207 bar)
Min. Yield Pressure:	10,600 psi (730 bar)
Rated Fatigue Pressure:	3000 psi (207 bar)
Temp. Range:	-22°F to 250°F (-30°C to 121°C)
Bypass Setting:	102 psi (7 bar)
Porting Head: Element Case:	Ductile Iron Steel
Weight of PLD-10DV: Weight of PLD-16DV:	97 lbs. (43.9 kg) 100 lbs. (45.3 kg)
Element Change Clearance:	10DV: 3.5" (89 mm) 16DV: 3.5" (89 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)

PLD 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

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

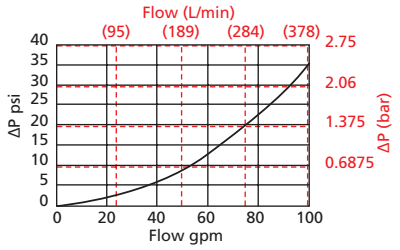
Element	DHC (gm)	Element	DHC (gm)
10DVZ1	57	16DVZ1	110
10DVZ3	59	16DVZ3	114
10DVZ5	64	16DVZ5	124
10DVZ10	62	16DVZ10	112
10DVZ25	63	16DVZ25	102

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

Pressure Drop Information
Based on Flow Rate and Viscosity

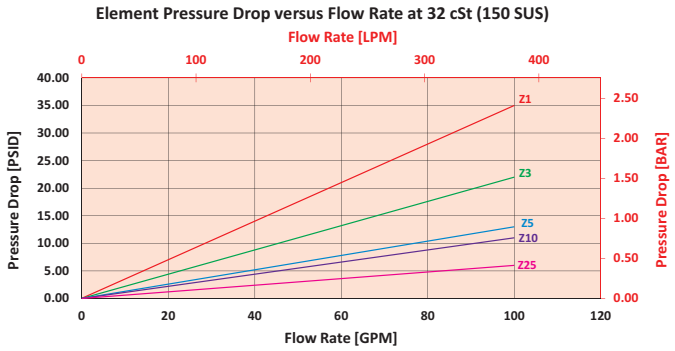
$\Delta P_{housing}$

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

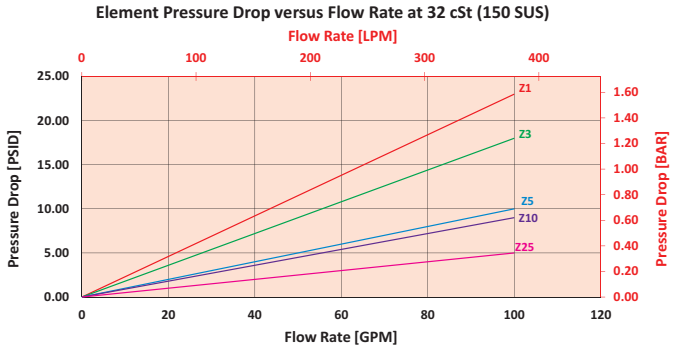


$\Delta P_{element}$

10DVZ



16DVZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 50 gpm (189 L/min) for PLD10DVZ1VF24VM using 200 SUS (42.6 cSt) fluid.

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

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm. In this case, $\Delta P_{element}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 8 psi [.55 bar] | $\Delta P_{element}$ = 17.5 psi [1.2 bar]

V_f = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3

ΔP_{filter} = 8 psi + (17.5 psi * 1.3) = 30.8 psi

OR

ΔP_{filter} = .55 bar + (1.2 bar * 1.3) = 2.1 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
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

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder 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

Filter Series
PLD

BOX 2

Length of Elements (in)
10
16

BOX 3

Element Size and Media
DVZ1 = DV size 1 µ synthetic media
DVZ3 = DV size 3 µ synthetic media
DVZ5 = DV size 5 µ synthetic media
DVZ10 = DV size 10 µ synthetic media
DVZ25 = DV size 25 µ synthetic media

BOX 4

Seal Material
Omit = Buna N
V = Viton®

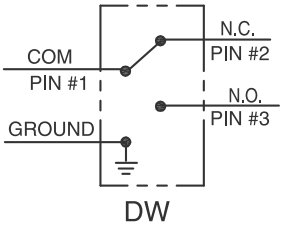
BOX 5

Porting
F24 = 1½" SAE 4-bolt flange Code 61
S24 = SAE-24 (1½")

BOX 6

Dirt Alarm® Options		
	Omit =	None
Visual	VM =	Visual pop-up w/manual rest
Electrical	DW =	AC/DC 3-wire (NO or NC)

VM = Manual Reset



DW = AC/DC 3-wire
(NO or NC)

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 filters in photograph are CF401CC10SD5 and DF401CCZ10PD5.

Features and Benefits

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

Up to
45 gpm
170 L/min
4000 psi
275 bar

Filter Housing Specifications

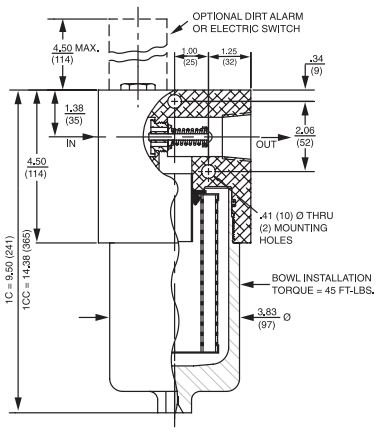
Flow Rating:	CF40 - 45 gpm (170 L/min) for 150 SUS (32 cSt) fluids DF40 - 30 gpm (113 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	4000 psi (275 bar)
Min. Yield Pressure:	12,000 psi (828 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	1800 psi (125 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 72 psi (5.0 bar) Non-bypassing model has a blocked bypass.
Porting Head: Element Case:	Aluminum Steel
Weight of CF40/DF40-1C: Weight of CF40/DF40-1CC:	14.0 lbs. (6.4 kg) 19.5 lbs. (8.9 kg)
Element Change Clearance:	4.00" (100 mm) for C elements 8.75" (219 mm) for CC elements

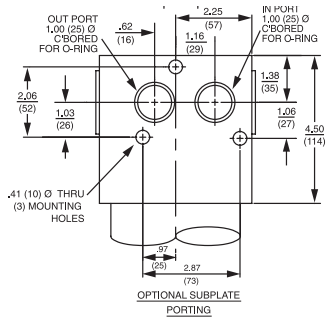
Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E Media (cellulose), Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® Media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP® Media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic), and all ASP® Media (synthetic)
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media (synthetic) and all ASP Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

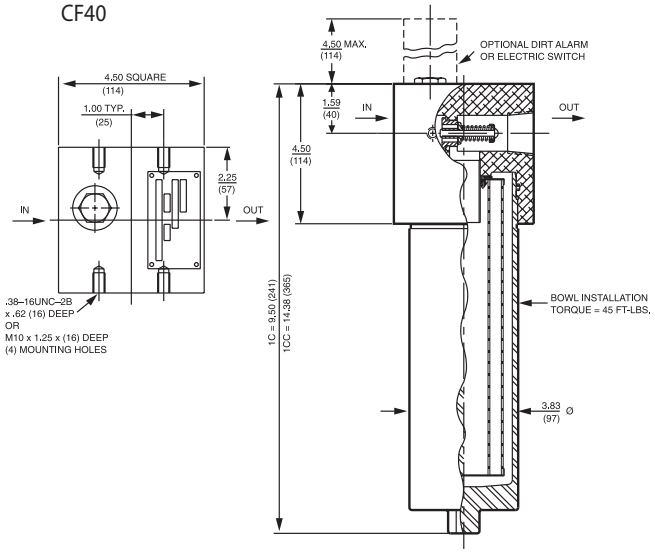
CF40/DF40 Top-Ported Pressure Filter

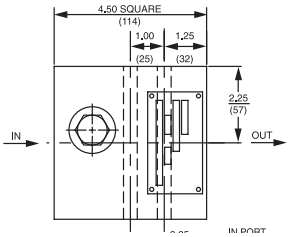
DF40





CF40





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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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: 150 psid (10 bar) for standard elements
3000 psid (210 bar) for high collapse (ZX) versions

Flow Direction: Outside In

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

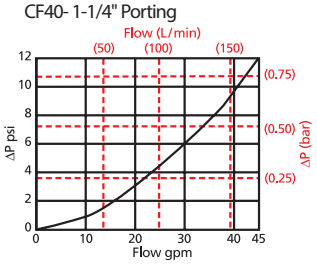
* Based on 100 psi terminal pressure

Pressure Drop Information
Based on Flow Rate and Viscosity

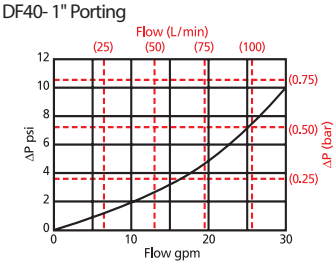
$\Delta P_{housing}$

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

CF40- 1-1/4" Porting

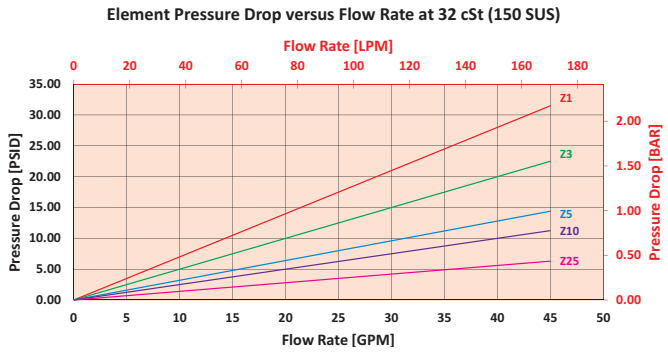


DF40- 1" Porting

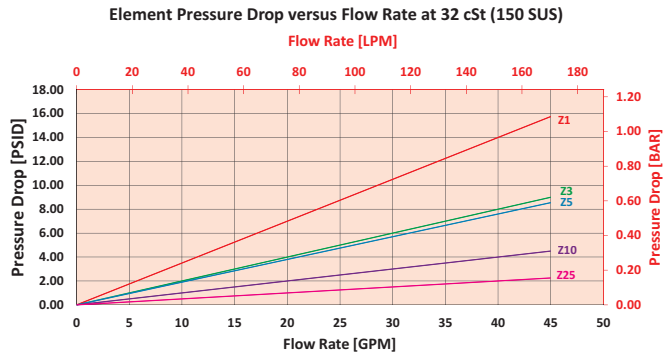


$\Delta P_{element}$

CZ



CCZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

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

Use the element pressure curve to determine $\Delta P_{element}$ at 25 gpm. In this case, $\Delta P_{element}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 4.5 psi [.31 bar] | $\Delta P_{element}$ = 6 psi [.42 bar]

V_f = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3

ΔP_{filter} = 4.5 psi + (6 psi * 1.3) = 12.3 psi

OR

ΔP_{filter} = .31 bar + (.42 bar * 1.3) = .86 bar

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

Ele.	ΔP	Ele.	ΔP
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

Top-Ported Pressure Filter

Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
CF40									

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

BOX 1 — Filter Series

- CF40
- CFN40 (Non-bypassing: requires ZX high collapse elements)
- DF40
- DFN40 (Non-bypassing: requires ZX high collapse elements)

BOX 2 — Number and Size of Elements

1	C
	CC

BOX 3 — Media Type

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

BOX 4 — Micron Rating

1	= 1 Micron	(Z, 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®)

BOX 5 — Seal Material

Omit	= Buna N
V	= Viton®
W	= Buna N, Anodized Aluminum parts
H	= EPR
H.5	= Skydrol® compatibility

BOX 6 — Porting *Only for CF40 Configuration

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

BOX 6 (Cont.) — Porting *Only for DF40 Configuration

O	= Manifold mounting
S	= SAE-16
P	= 1" NPTF
B	= ISO 228 G-1

BOX 7 — Bypass

- Omit = 40 PSI Bypass
- X = Blocked bypass
- 25 = 25 psi bypass setting (CF40 only)
- 30 = 30 psi bypass setting (CF40 only)
- 50 = 50 psi bypass setting

(Omit box 7 if a non-bypassing filter housing is selected)

BOX 8 — Test Ports

Omit	= None
L	= Two 1/4" NPTF inlet and outlet female test ports

BOX 9 — Dirt Alarm® Options

	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ ½" conduit female connection
	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 10 — Additional Options

Omit	= None
N	= No-Element Indicator (CF40 or DF40)

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. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Box 9. Standard indicator setting for non-bypassing model is 50 psi unless otherwise noted.

Box 10. N option is not available with CFN40 or DFN40. N option should be used in conjunction with dirt alarm.

Top-Ported Pressure Filter PF40

Model No. of filter in photograph is PF409HZ10S.

Features and Benefits

- Top-ported pressure filter
- All steel housing offers unparalleled fatigue rating
- Available with non-bypass option with high collapse element
- Two bowl lengths provide optimal sizing for the application
- Offered in conventional sub-plate, SAE straight thread, and ISO 228 porting

50 gpm
190 L/min
4000 psi
275 bar

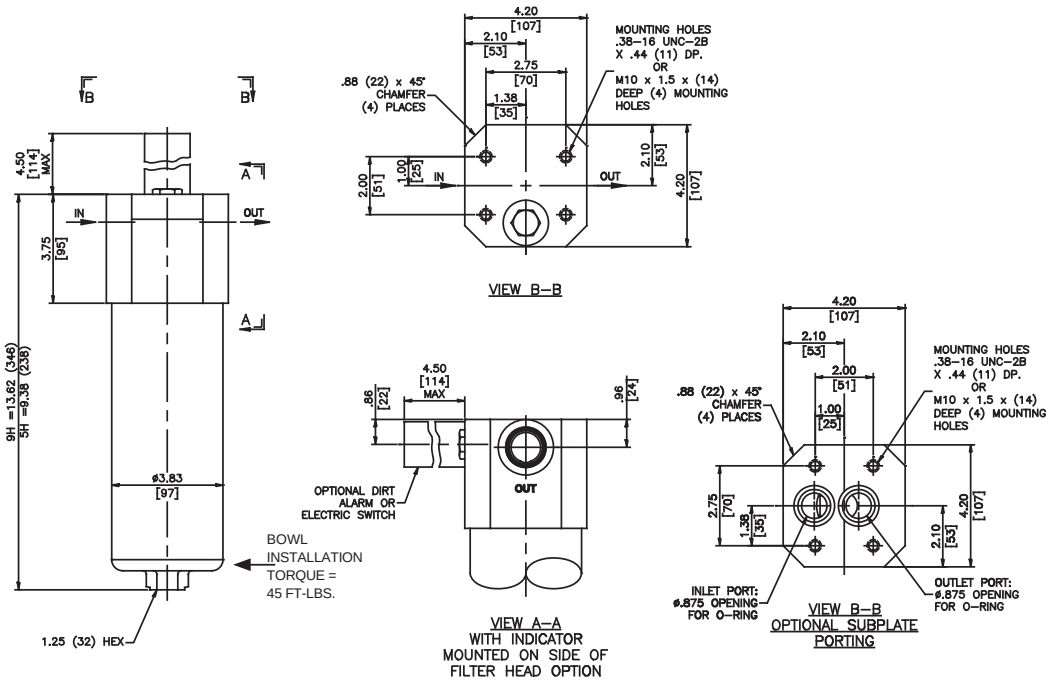
Filter Housing Specifications

Flow Rating:	Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	4000 psi (275 bar)
Min. Yield Pressure:	12,000 psi (828 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	2500 psi (173 bar), per NFPA T2.6.1-R1-2005
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)
Porting Head: Element Case:	Steel Steel
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)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E Media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation

PF40 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

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402 $ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171 $ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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

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

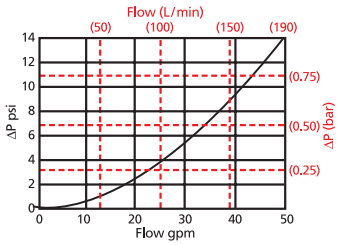
Flow Direction: Outside In

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

Pressure Drop Information
Based on Flow Rate and Viscosity

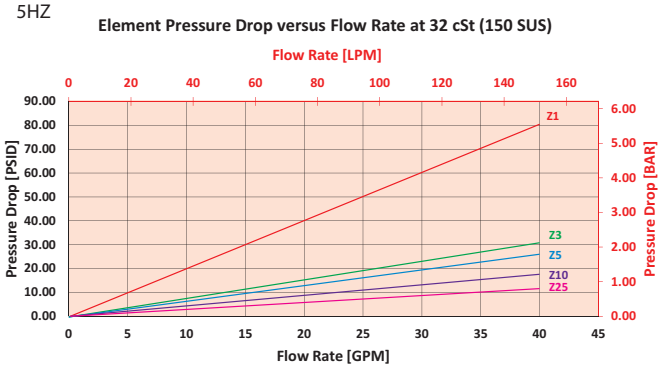
$\Delta P_{housing}$

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

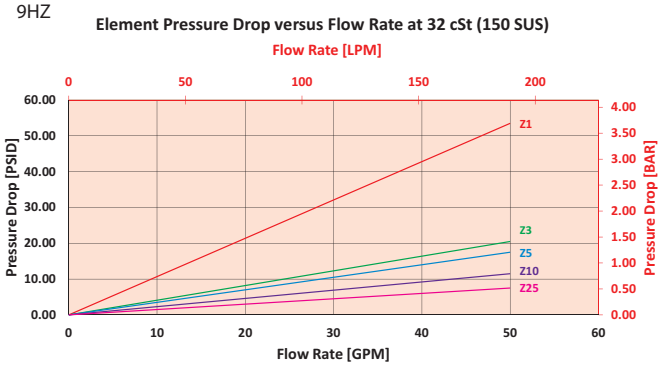


$\Delta P_{element}$

5HZ



9HZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

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 $\Delta P_{housing}$ at 20 gpm. In this case, $\Delta P_{housing}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 2.5 psi [.17 bar] | $\Delta P_{element}$ = 15 psi [1 bar]

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

ΔP_{filter} = 2.5 psi + (15 psi * 1.1) = 19 psi

OR

ΔP_{filter} = .17 bar + (1 bar * 1.1) = 1.3 bar

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

Ele.	ΔP
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:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
PF40									

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	
PF40	5	HZ3		S			D5	S		= PF405HZ3SD5S

BOX 1 – Filter Series

- PF40
- PFN40 (Non-bypassing: requires ZX high collapse elements)

BOX 2 – Element Length (in)

- 5
- 9

BOX 3 – Element Part Number

- HZ1 = H size 1 µ Excellement® Z-Media® (synthetic)
- 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 – Seal Material

- Omit = Buna N
- H = EPR
- V = Viton®
- H.5 = Skydrol® compatibility

BOX 5 – Porting

- S = SAE-16
- B = ISO 228 G-1"

BOX 6 – Bypass

- Omit = 40 PSI bypass
- X = Blocked Bypass
- 50 = 50 PSI bypass

(Omit box 6 if PFN40 is used)

BOX 7 – Test Points

- Omit = None
- L = Two ¼" NPTF inlet & outlet female test ports
- U = Schroeder Check 7/16"-20 UNF test point installation in head (upstream)

BOX 8 – Dirt Alarm® Options

	Omit =	None
Visual	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 9 – Dirt Alarm® Location

- Omit = Top mounted
- S = Side mounted

BOX 10 – Bowl Drain Options

- Omit = None
- DR = Drain 7/16"-20

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 6. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

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

Manifold Mounted Pressure Filter RFS50

Model No. of filter in photograph is RFS508R10O.

Features and Benefits

- Manifold mounted high pressure filter
- Offered in square head conventional subplate porting
- Direct mounting to customer's manifold
- Standard drain plug in bowl for easy servicing
- Various dirt alarm options available

30 gpm
115 L/min
5000 psi
345 bar

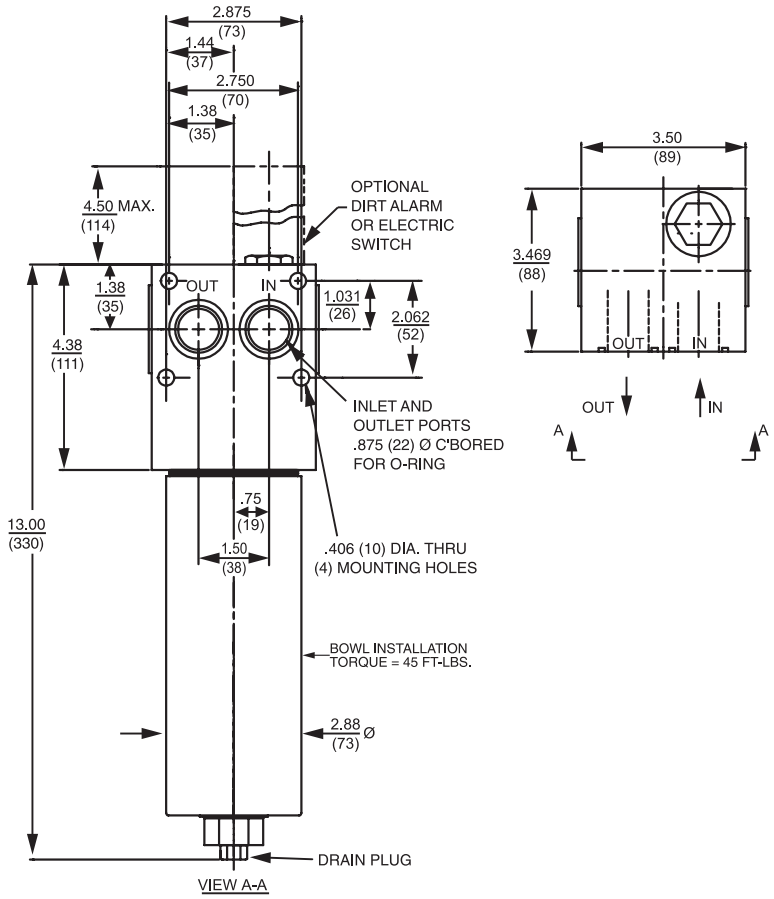
Filter Housing Specifications

Flow Rating:	Up to 30 gpm (115 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	15,500 psi (1070 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	Contact Factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 56 psi (3.9 bar)
Porting Head: Element Case:	Steel Steel
Weight of RFS50-8R:	16.50 lbs. (7.5 kg)
Element Change Clearance:	3.0" (75 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E Media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation
Skydrol®	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)

RFS50 Manifold Mounted Pressure Filter



Element Performance Information & Dirt Holding Capacity

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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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

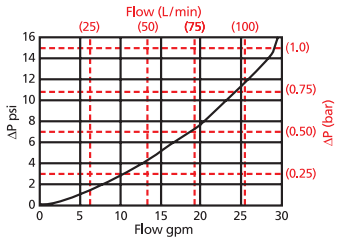
Element	DHC (gm)
8RZ1	33
8RZ3	26
8RZ5	51
8RZ10	29
8RZ25	30

Element Collapse Rating: 150 psid (10 bar) for standard elements
Flow Direction: Outside In
Element Nominal Dimensions: 2.18" (55 mm) O.D. x 8.15" (206 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

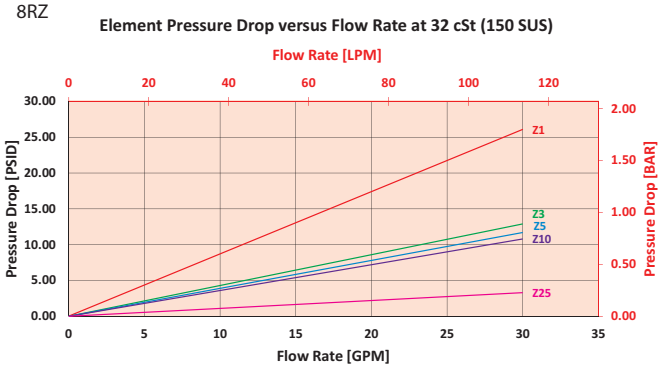
$\Delta P_{housing}$

RFS50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

8RZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 15 gpm (57 L/min) for RFS508RZ10VOD5 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 15 gpm. In this case, $\Delta P_{housing}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 5 psi [.34 bar] | $\Delta P_{element}$ = 5 psi [.34 bar]

V_f = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3

ΔP_{filter} = 5 psi + (5 psi * 1.3) = 11.5 psi

OR

ΔP_{filter} = .34 bar + (.34 bar * 1.3) = .78 bar

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

Ele.	ΔP
8R3	0.35
8R10	0.30

RFS50 Manifold Mounted Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder RFS50:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
RFS50 –	–	–	–	–	–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
RFS50 –	8 –	RZ10 –	V –	O –	–	–	D5	= RFS508RZ10VOD5

BOX 1

Filter Series
RFS50
RFSN50

BOX 2

Element Length (in)
8

BOX 3

Element Size and Media
R3 = R size 3 µ E media (cellulose)
R10 = R size 10 µ E media (cellulose)
RZ1 = R size 1 µ Excellement® Z-Media® (synthetic)
RZ3 = R size 3 µ Excellement® Z-Media® (synthetic)
RZ5 = R size 5 µ Excellement® Z-Media® (synthetic)
RZ10 = R size 10 µ Excellement® Z-Media® (synthetic)
RZ25 = R size 25 µ Excellement® Z-Media® (synthetic)
RZX1 = R size 1 µ Excellement® Z-Media® (high collapse center tube)
RZX3 = R size 3 µ Excellement® Z-Media® (high collapse center tube)
RZX5 =R size 5 µ Excellement® Z-Media® (high collapse center tube)
RZX10 = R size 10 µ Excellement® Z-Media® (high collapse center tube)
RZX25 = R size 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 4

Seal Material
Omit = Buna N
H = EPR
V = Viton®

BOX 5

Inlet Port
O = Manifold mounting

BOX 6

Options
Omit = 40 PSI Bypass
X = Blocked bypass
50 = 50 psi bypass setting
(Omit Box 6 if RFSN50 is used)

BOX 7

Test Points
L = Two 1/4" NPTF inlet and outlet female test ports
U = Schroeder Check 7/16"-20 UNF Test Point installation in head (upstream)

BOX 8

Dirt Alarm® Options		
	Omit =	None
Visual	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC=	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, and 4.

Box 3. Example: 8RZ1V synthetic media elements are only available with Viton seals.

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 5. For option O, O-rings included, fastening hardware not included.

Box 6. When X is paired with a standard filter series, a standard bushing and spring plate will be used

Top-Ported Pressure Filter RF60

Model No. of filter in photograph is RF608R10P.

Features and Benefits

- Top-ported high pressure filter
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- Available with non-bypass option with high collapse element
- Various dirt alarm options available

30 gpm
115 L/min
6000 psi
415 bar

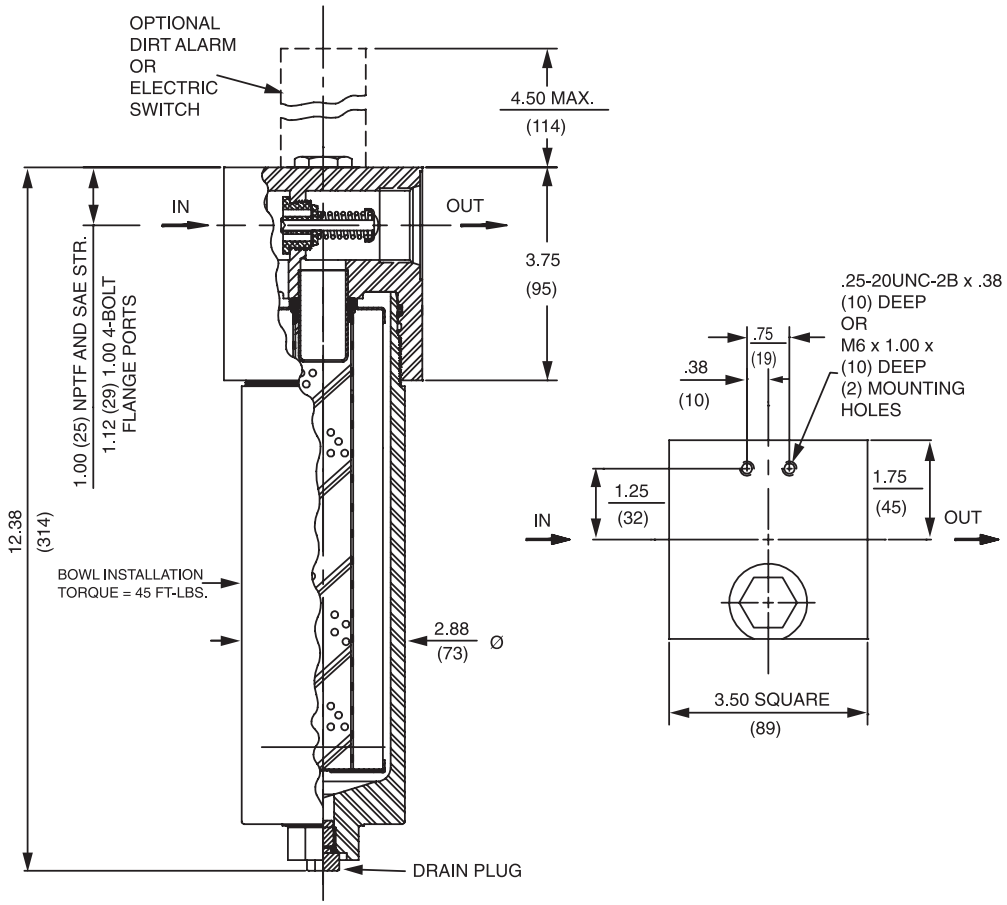
Filter Housing Specifications

Flow Rating:	Up to 30 gpm (115 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	18,000 psi (1241 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	2300 psi (159 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 56 psi (3.9 bar) Non-bypassing model has a blocked bypass.
Porting Head: Element Case:	Steel Steel
Weight of RF60-8R:	15.75 lbs. (7.2 kg)
Element Change Clearance:	3.0" (75 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E-Media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation
Skydrol®	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)

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.

Element Performance Information & Dirt Holding Capacity

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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) for standard elements
3000 psid (210 bar) for high collapse (ZX) versions

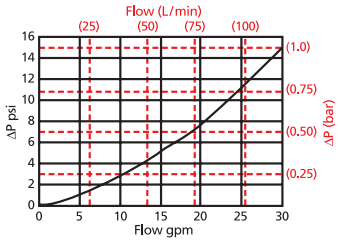
Flow Direction: Outside In

Element Nominal Dimensions: 2.18" (55 mm) O.D. x 8.15" (206 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

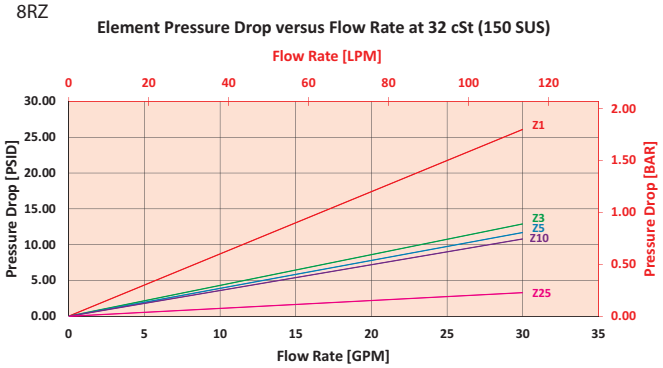
$\Delta P_{housing}$

RF60 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

8RZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 15 gpm (57 L/min) for RF608RZ10VPD5 using 100 SUS (21.3 cSt) fluid.

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

$\Delta P_{housing}$ = 5 psi [.34 bar] | $\Delta P_{element}$ = 5 psi [.34 bar]

V_f = 100 SUS (21.3 cSt) / 150 SUS (32 cSt) = .67

ΔP_{filter} = 5 psi + (5 psi * .67) = 8.3 psi

OR

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

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

Ele.	ΔP
8R3	0.35
8R10	0.30
8RZX3	C/F
8RZX10	C/F

RF60 Top-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder RF60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
RF60 –	–	–	–	–	–	–	

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
RF60 –	8 –	RZ10 –	V –	P –	–	–	D5	= RF608RZ10VPD5

BOX 1 – Filter Series

RF60	
RFN60	(Non-bypassing: requires ZX high collapse elements)

BOX 2 – Element Length (in)

8

BOX 3 – Element Size and Media

R3	= R size 3 µ E media (cellulose)
R10	= R size 10 µ E media (cellulose)
RZ1	= R size 1 µ Excellement® Z-Media® (synthetic)
RZ3	= R size 3 µ Excellement® Z-Media® (synthetic)
RZ5	= R size 5 µ Excellement® Z-Media® (synthetic)
RZ10	= R size 10 µ Excellement® Z-Media® (synthetic)
RZ25	= R size 25 µ Excellement® Z-Media® (synthetic)
RZX1	= R size 1 µ Excellement® Z-Media® (high collapse center tube)
RZX3	= R size 3 µ Excellement® Z-Media® (high collapse center tube)
RZX5	= R size 5 µ Excellement® Z-Media® (high collapse center tube)
RZX10	= R size 10 µ Excellement® Z-Media® (high collapse center tube)
RZX25	= R size 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 4 – Seal Material

Omit	= Buna N
H	= EPR
V	= Viton®

BOX 5 – Inlet Port

P =	1" NPTF
S =	SAE-16
F =	1" SAE 4-bolt flange Code 62
B =	ISO 228 G-1"

BOX 6 – Bypass

Omit	= 40 PSI Bypass
X	= Blocked bypass
50	= 50 psi bypass setting
	(Omit Box 6 if RFN60 is used)

BOX 7 – Test Points

L	= Two ¼" NPTF inlet and outlet female test ports
U	= Schroeder Check 7/16"-20 UNF Test Point installation in head (upstream)

BOX 8 – Dirt Alarm® Options

	Omit =	None
Visual	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

NOTES:

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. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

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

Top-Ported Pressure Filter CF60

Model No. of filter in photograph is CF601CCZ3SD5.

Features and Benefits

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

50 gpm
190 L/min
6000 psi
415 bar

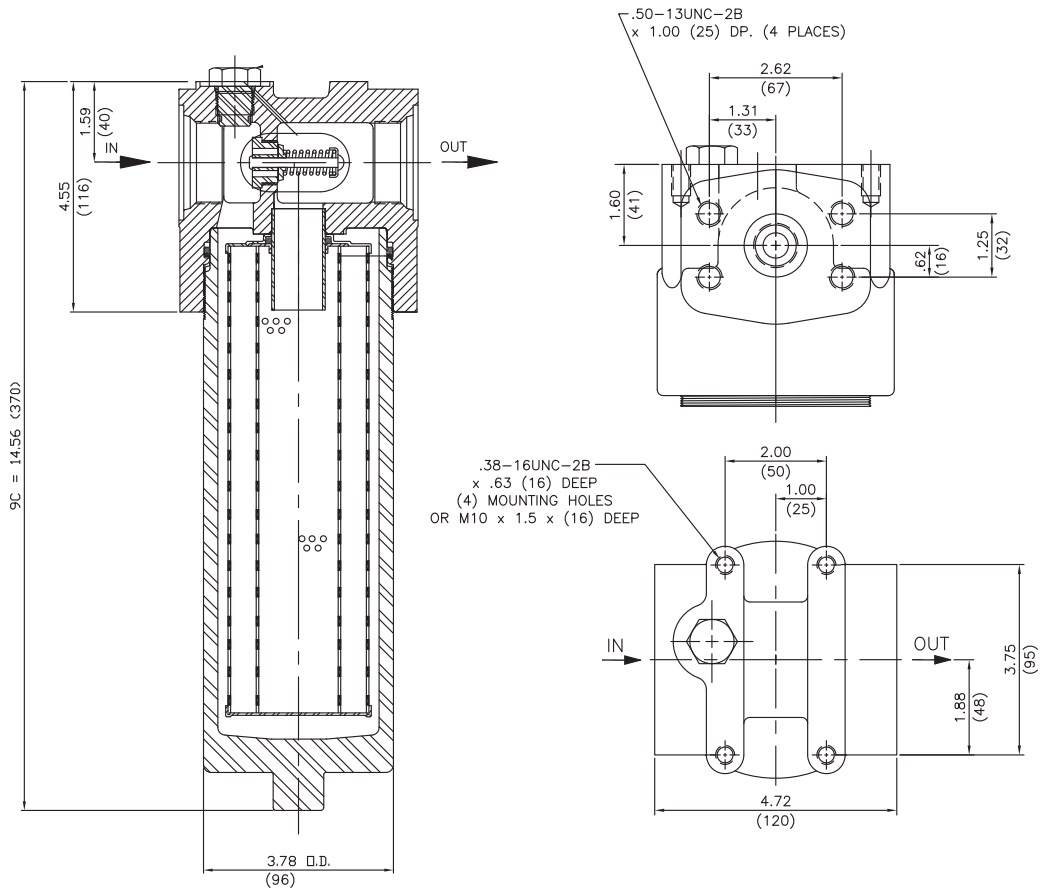
Filter Housing Specifications

Flow Rating:	Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	15,500 psi (1070 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	4000 psi (276 bar), per NFPA T2.6.1-R1-2005
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) Non-bypassing model has a blocked bypass.
Porting Head: Element Case:	Ductile Iron Steel
Weight of CF60-9C:	24.0 lbs. (10.9 kg)
Element Change Clearance:	4.0" (103 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E-Media (cellulose), Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® Media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic) and 10 µ ASP® Media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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

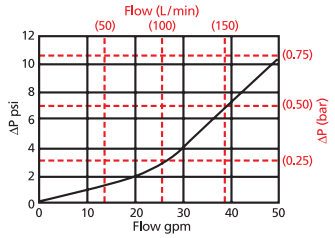
Flow Direction: Outside In

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

Pressure Drop Information
Based on Flow Rate and Viscosity

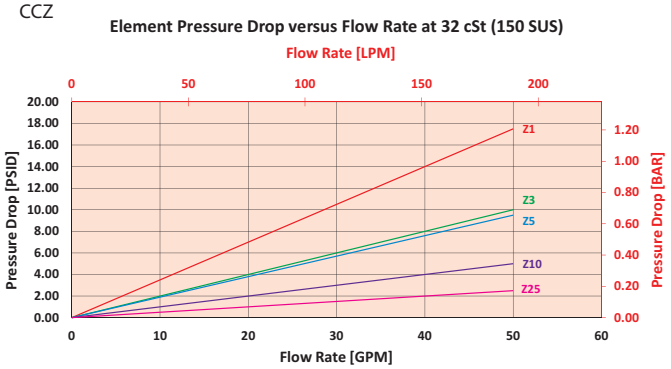
$\Delta P_{housing}$

CF60 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

CCZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

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 $\Delta P_{housing}$ at 30 gpm. In this case, $\Delta P_{housing}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 4 psi [.28 bar] | $\Delta P_{element}$ = 3 psi [.21 bar]

V_f = 175 SUS (37.2 cSt) / 150 SUS (32 cSt) = 1.2

ΔP_{filter} = 4 psi + (3 psi * 1.2) = 7.6 psi

OR

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

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

Ele.	ΔP
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 Model Number Selection

How to Build a Valid Model Number for a Schroeder CF60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
CF60 –		–		–		–		–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	
CF60 –	1CC –	Z –	10 –		– S –		– D5 –		= CF601CCZ10SD5

BOX 1 – Filter Series

CF60
CFN60 (Non-bypassing: requires ZX high collapse elements)

BOX 2 – Number and Size of Elements

1CC

BOX 3 – Media Type

Omit	E Media (cellulose)
Z	= Excellement® Z-Media® (synthetic)
ZX	= Excellement® Z- Media® (high collapse center tube)
AS	= Anti-Stat Media (synthetic)

BOX 4 – Micron Rating

1	= 1 Micron	(Z media)
3	= 3 Micron	(AS,E, Z and ZX media)
5	= 5 Micron	(AS, Z, and ZX media)
10	= 10 Micron	(AS,E, Z, and ZX media)
25	= 25 Micron	(E, Z and ZX media)

BOX 5 – Seal Material

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

BOX 6 – Porting

S =	SAE-20
P =	1¼" NPTF
F =	1¼" SAE 4-bolt flange code 62
B =	ISO 228 G-1¼"

BOX 7 – Bypass

Omit = 40 PSI Bypass
X = Blocked Bypass
30 = 30 psi bypass setting
50 = 50 psi bypass setting
(Omit box 7 if a CFN60 is selected)

BOX 8 – Dirt Alarm® Options

	Omit =	None
Visual	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13 =	Supplied w/ threaded connector & light
	MS14 =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. E media (cellulose) elements are only available with Buna N seals.

Box 5. 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. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

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

Top-Ported Pressure Filter CTF60

Model No. of filter in photograph is CTF608CTZ10F20D9.

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
284 L/min
6000 psi
415 bar

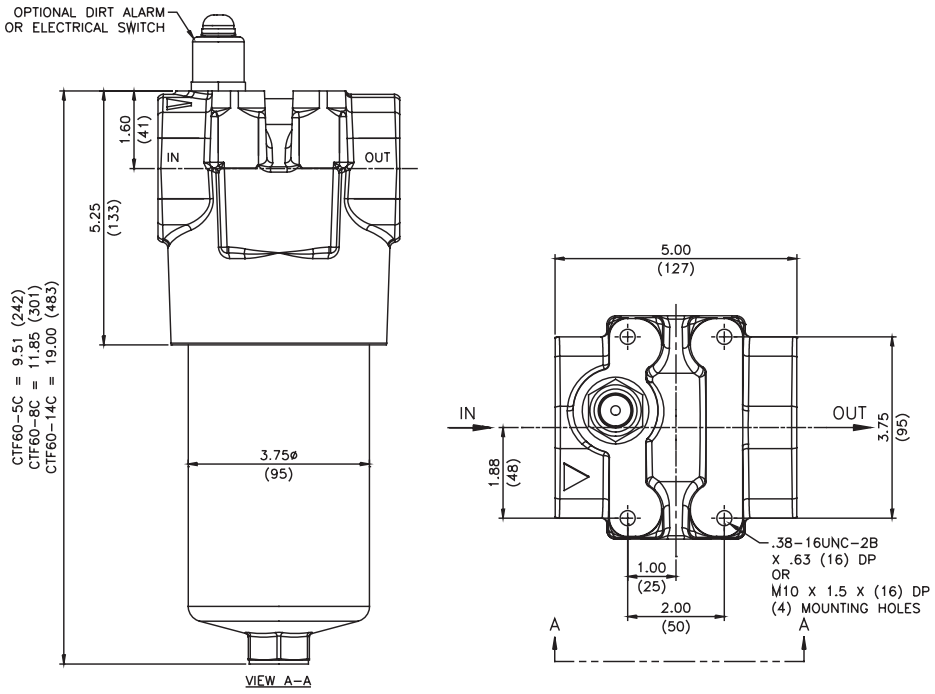
Filter Housing Specifications

Flow Rating:	Up to 75 gpm (284 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	18,000 psi (1241 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	6000 psi (415 bar), per NFPA T2.6.1-R1-2005 (only with F20 4-bolt flange porting)
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 50 psi (3.4 bar) Full Flow: 83 psi (5.7 bar) Non-bypassing model has a blocked bypass.
Porting Head: Element Case:	Ductile Iron Steel
Weight of CTF60-5CT: CTF60-8CT: CTF60-14CT:	25 lbs. (11.4 kg) 29 lbs. (13.2 kg) 38 lbs. (17.3 kg)
Element Change Clearance:	4.0" (103 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation

CTF60 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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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	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: 150 psid (10 bar) for standard elements
3000 psid (210 bar) for high collapse (ZX) versions

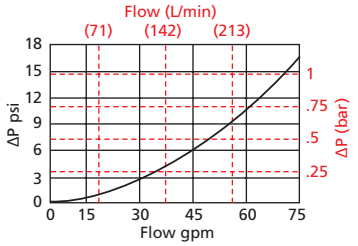
Flow Direction: Outside In

Element 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

Pressure Drop Information
Based on Flow Rate and Viscosity

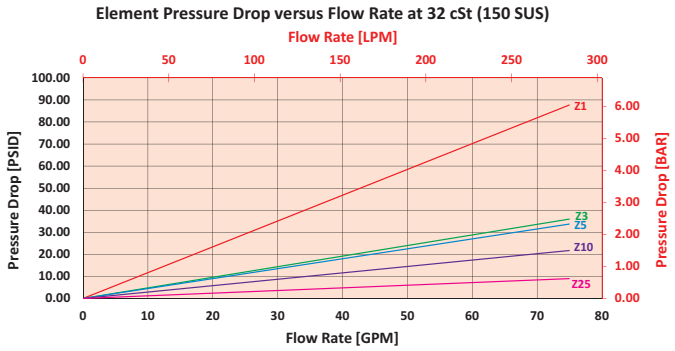
$\Delta P_{housing}$

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

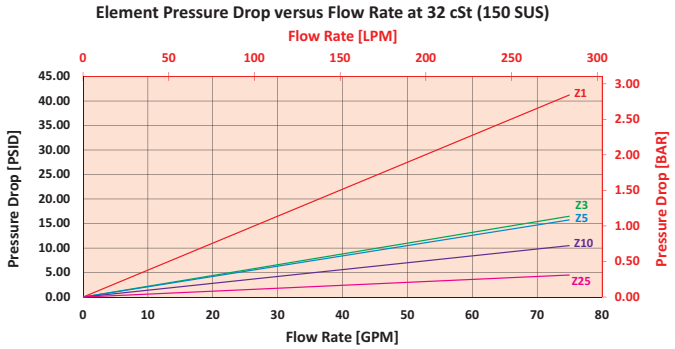


$\Delta P_{element}$

8CTZ



14CTZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

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

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm. In this case, $\Delta P_{element}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 7 psi [.48 bar] | $\Delta P_{element}$ = 22 psi [1.5 bar]

V_f = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3

ΔP_{filter} = 7 psi + (22 psi * 1.3) = 35.6 psi

OR

ΔP_{filter} = .48 bar + (1.5 bar * 1.3) = 2.4 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
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

How to Build a Valid Model Number for a Schroeder CTF60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
CTF60 –	–	–	–	–	–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
CTF60 –	8 –	CTZ5 –	–	S20 –	–	–	D9	= CTF608CTZ5S20D9

BOX 1 – Filter Series

CTF60
CTFN60 (Non-bypassing: requires ZX high collapse elements)

BOX 2 – Element Length (in.)

5
8
14

BOX 3 – Element Part Number

CTZ1	= 1 µ Excellement® Z-Media® (synthetic)
CTZ3	= 3 µ Excellement® Z-Media® (synthetic)
CTZ5	= 5 µ Excellement® Z-Media® (synthetic)
CTZ10	= 10 µ Excellement® Z-Media® (synthetic)
CTZ25	= 25 µ Excellement® Z-Media® (synthetic)
CTZX1	= 1 µ Excellement® Z-Media® (high collapse center tube)
CTZX3	= 3 µ Excellement® Z-Media® (high collapse center tube)
CTZX5	= 5 µ Excellement® Z-Media® (high collapse center tube)
CTZX10	= 10 µ Excellement® Z-Media® (high collapse center tube)
CTZX25	= 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 4 – Seal Material

Omit	= Buna N
V	= Viton®
H	= EPR

BOX 5 – Inlet Port

P20	= 1¼" NPTF
S20	= SAE-20
F20	= 1¼" SAE 4-bolt flange Code 62
B20	= ISO 228 G-1¼"

BOX 6 – Bypass

Omit	= 50 PSI Bypass

(Omit Box 6 if a CTFN60 is selected)

BOX 7 – Options

UU	Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream & downstream)
DR	= Drain on bowl

BOX 8 – Dirt Alarm® Options

	Omit =	None
Visual	D9 =	Visual pop-up
Electrical	MS5SS =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5SSLC =	Low current MS5
	MS10SS =	Electrical w/ DIN connector (male end only)
	MS10SSLC =	Low current MS10
	MS11SS =	Electrical w/ 12 ft. 4-conductor wire
	MS12SS=	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12SSLC =	Low current MS12
	MS16SS =	Electrical w/ weather-packed sealed connector
	MS16SSLC =	Low current MS16
	MS17SSLC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	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
	MS17SSLCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13SSDCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13SSDCLCT =	Low current MS13DCT
	MS14SSDCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14SSDCLCT =	Low current MS14DCT

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 8. All Dirt Alarm® Indicators must be Stainless Steel. Standard indicator setting is 50 psi. For replacement indicators, contact the factory.

Top-Ported Pressure Filter VF60

Model No. of filter in photograph is VF609VZ10SD5.

Features and Benefits

- Top-ported high pressure filter
- Threaded bowl for easy element servicing
- Offered in pipe, SAE straight thread and ISO 228 porting
- Various dirt alarm options available

70 gpm
265 L/min
6000 psi
415 bar

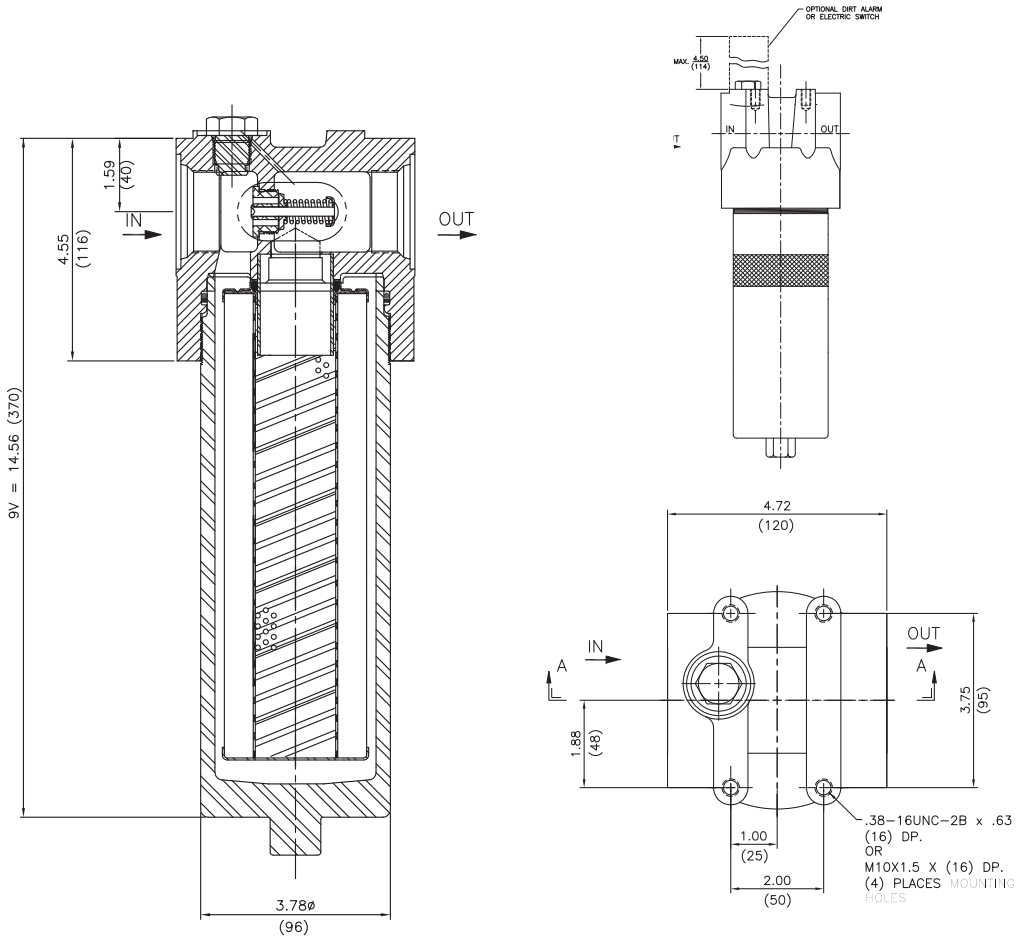
Filter Housing Specifications

Flow Rating:	Up to 70 gpm (265 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	15,500 psi (1070 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	3300 psi (230 bar), per NFPA T2.6.1-R1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 50 psi (3.5 bar) Full Flow: 65 psi (4.5 bar)
Porting Head: Element Case:	Ductile Iron Steel
Weight of VF60-9V:	24.0 lbs. (10.9 kg)
Element Change Clearance:	4.0" (103 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E-Media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation
Skydrol®	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)

VF60 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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
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

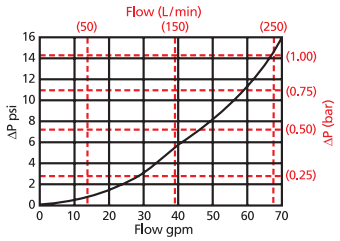
Flow Direction: Outside In

Element Nominal Dimensions: 9V: 2.9" (75 mm) O.D. x 9.5" (240 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

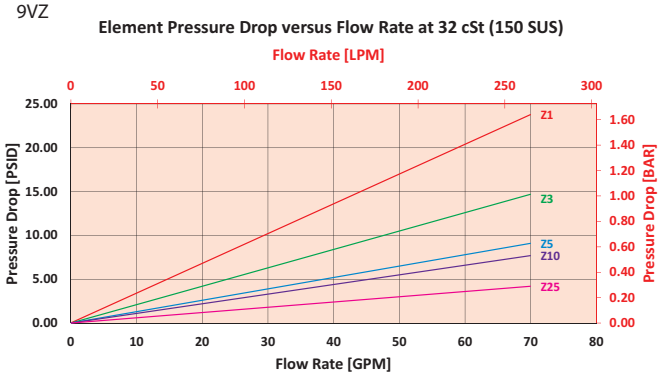
$\Delta P_{housing}$

VF60 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

9VZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

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

Use the element pressure curve to determine $\Delta P_{element}$ at 40 gpm. In this case, $\Delta P_{element}$ 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 6 psi [.42 bar] | $\Delta P_{element}$ = 13 psi [.90 bar]

V_f = 120 SUS (25.5 cSt) / 150 SUS (32 cSt) = .80

ΔP_{filter} = 6 psi + (13 psi * .80) = 16.4 psi

OR

ΔP_{filter} = .42 bar + (..90 bar * .80) = 1.14 bar

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

Ele.	ΔP
9V3	0.32
9V10	0.24

VF60 Top-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder VF60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7
VF60 –	–	–	–	–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
VF60 –	9 –	VZ1 –	–	S –	–	–	= VF609VZ1S

BOX 1 – Filter Series

VF60

BOX 2 – Element Length (in)

9

BOX 3 – Element Size and Media

V3	= V size 3 µ E media (cellulose)
V10	= V size 10 µ E media (cellulose)
VZ1	= V size 1 µ Excellement® Z-Media® (synthetic)
VZ3	= V size 3 µ Excellement® Z-Media® (synthetic)
VZ5	= V size 5 µ Excellement® Z-Media® (synthetic)
VZ10	= V size 10 µ Excellement® Z-Media® (synthetic)
VZ25	= V size 25 µ Excellement® Z-Media® (synthetic)
VM150	= V size 150 µ M media (reusable metal)

BOX 4 – Seal Material

Omit	= Buna N
V	= Viton®
H	= EPR

BOX 5 – Inlet Port

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

BOX 6 – Bypass

Omit	= 50 PSI bypass
40	= 40 PSI bypass

BOX 7 – Dirt Alarm® Options

	Omit =	None
Visual	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, and 4.

Box 2. Example: 9VZ1V 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.

High-Flow, High Pressure Filter LW60

Features and Benefits

- Horizontal alignment allows straight-through flow, maximizing efficiency and minimizing pressure drop
- Propriety synthetic media designed specifically for the mining industry. Excellement-MD™ provides level of filtration not achievable using alternative wire mesh elements because of their lack of absolute ratings
- Two-inch BSPP ports are easily adaptable to Super Stecko fittings commonly used underground
- Stainless steel bypass valve that ensures smooth integration with 95/5 fluid
- Non-bypassing version available with high crush (4500 psid) cleanable metal mesh (25 micron) element

Model No. of filter in photograph is LW6039ZPZ5VB32DPG.

300 gpm
1135 L/min
6000 psi
415 bar

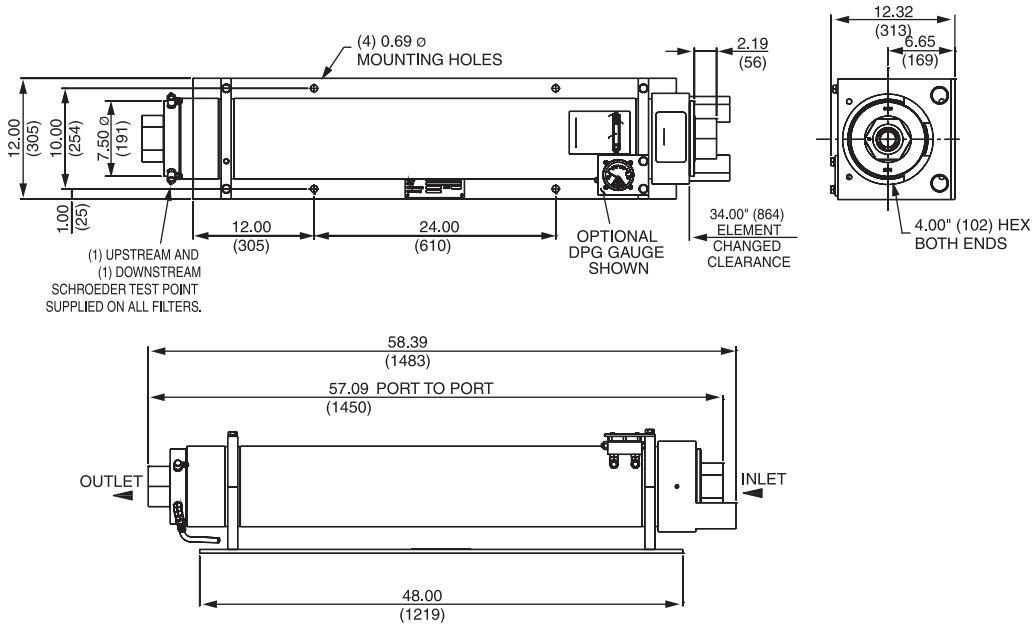
Filter Housing Specifications

Flow Rating:	Up to 300 gpm (1135 L/min) for use with 95/5 fluids
Max. Operating Pressure:	6000 psi (414 bar)
Min. Yield Pressure:	18,000 psi (1240 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	4500 psi (310 bar), per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 50 psi (3.4 bar) LWN60 non-bypassing model available with high crush element
Porting Cap: Housing:	Steel Steel
Weight:	550 lb. (250 kg)
Element Change Clearance:	34.0" (864 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
95/5 fluids	Specifically designed for use with 95/5 fluids applications

LW60 High-Flow, 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

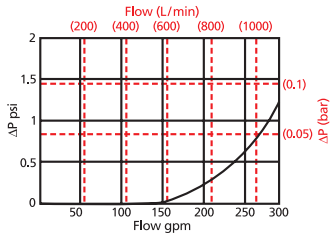
Element	Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171 $ß_{x(c)} \geq 1000$
39ZPZ3V	5.1
39ZPZ5V	6.1
39ZPZ10V	12.1
39ZPZ25V	17.7

Element	DHC (gm)
39ZPZ3V	449
39ZPZ5V	359
39ZPZ10V	429
39ZPZ25V	284

Element Collapse Rating:	150 psid (10 bar)
Flow Direction:	Outside In
Element Nominal Dimensions:	5.0" (127 mm) O.D. x 38.0" (965 mm) long

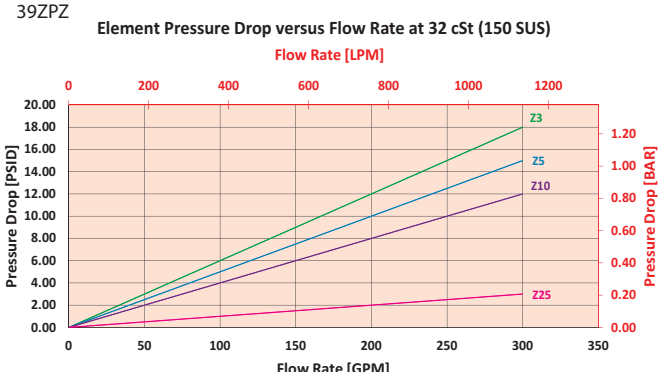
$\Delta P_{housing}$

LW60 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

39ZPZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 200 gpm (757 L/min) for LW6039ZPZ3VB32DPG using 75 SUS (16 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 200 gpm. In this case, $\Delta P_{housing}$ is .25 psi (.02 bar) on the graph for the LW60 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 200 gpm. In this case, $\Delta P_{element}$ is 12 psi (.83 bar) according to the graph for the 39ZPZ3 element.

Because the viscosity in this sample is 75 SUS (16 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = .25 psi [.02 bar] | $\Delta P_{element}$ = 12 psi [.83 bar]

V_f = 75 SUS (16 cSt) / 150 SUS (32 cSt) = .50

ΔP_{filter} = .25 psi + (12 psi * .50) = 6.25 psi

OR

ΔP_{filter} = .02 bar + (.83 bar * .50) = .44 bar

LW60 High-Flow, High Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder LW60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
LW60 –		–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
LW60 –	39ZPZ3V –	B32 –		– DPG	= LW6039ZPZ3VB32DPG

BOX 1 – Filter Series

LW60

BOX 2 – Element Part Number

39ZPZ3V = 3 µ Excellement® Z-Media® (synthetic)
39ZPZ5V = 5 µ Excellement® Z-Media® (synthetic)
39ZPZ10V = 10 µ Excellement® Z-Media® (synthetic)
39ZPZ25V = 25 µ Excellement® Z-Media® (synthetic)

BOX 3 – Porting

B32 = ISO 228 G-2" (2-11 BSPP)

BOX 4 – Bypass Settings

Omit = 50 psi cracking
30 = 30 psi cracking

BOX 5 – Dirt Alarm® Options

DPG = Differential pressure gauge

How to Build a Valid Model Number for a Schroeder LWN60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
LWN60 –		–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
LWN60 –	39ZPMX25V –	B32 –		– DPG	= LW6039ZMX25VB32DPG

BOX 1 – Filter Series

LWN60
(Non-bypassing: requires MX high collapse elements)

BOX 2 – Element Part Number

39ZPMX25V = 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 3 – Porting

B32 = ISO 228 G-2" (2-11 BSPP)

BOX 4 – Bypass Settings

Omit = Blocked

BOX 5 – Dirt Alarm® Options

DPG = Differential pressure gauge

Base-Ported Pressure Filter KF30/KF50

Features and Benefits

- Base-ported pressure filter
- Can be installed in vertical or horizontal position
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Offered in conventional subplate porting
- Same day shipment model available
- Double and triple stacking of K-size elements can be replaced by single KK or 27K-size elements
- G Available with quality-protected GeoSeal® Elements (GKF30/GKF50)

Model No. of filter in photograph is KF30/KF501K10SD.

100/150 gpm
380/570 L/min
KF30- 3000 psi
210 bar
KF50- 5000 psi
345 bar

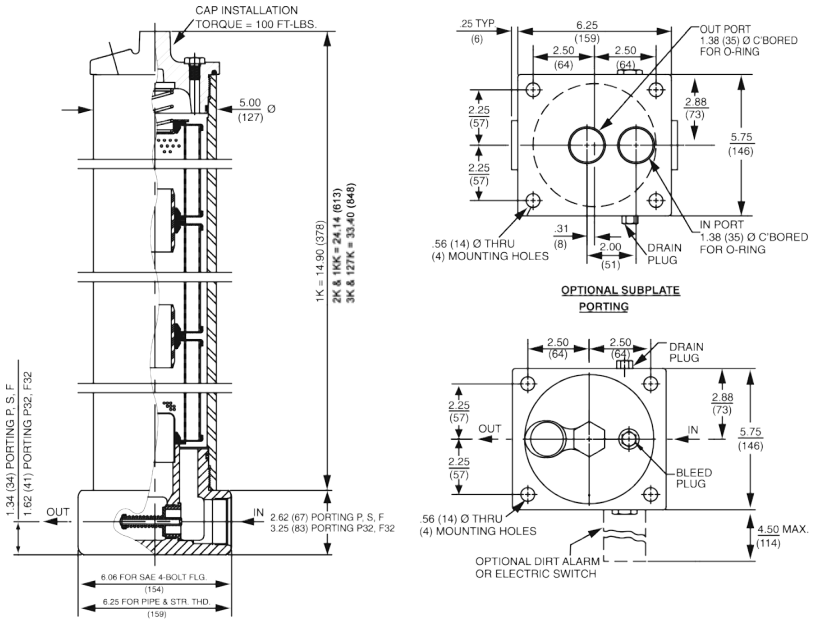
Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids With 2" porting only, up to 150 gpm (570 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	KF30- 3000 psi (210 bar) KF50- 5000 psi (345 bar)
Min. Yield Pressure:	KF30- 12,000 psi (830 bar), per NFPA T2.6.1 KF50- 15,000 psi (1025 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	KF30- 2500 psi (170 bar), per NFPA T2.6.1-2005 KF50- 3500 psi (240 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 61 psi (4.2 bar) Non-bypassing model has a blocked bypass.
Porting Base & Cap: Element Case:	Ductile Iron Steel
Weight of KF30-1K: Weight of KF30-2K: Weight of KF30-3K: Weight of KF50-1K: Weight of KF50-2K: Weight of KF50-3K:	48 lbs. (22 kg) 65 lbs. (30 kg) 81 lbs. (37 kg) 59.7 lbs. (27.1 kg) 80.7 lbs. (36.6 kg) 102.0 lbs. (46.3 kg)
Element Change Clearance:	8.50" (215 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose), Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® Media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP® Media
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP® Media
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP® Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

KF30/KF50 Base-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

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_x(c) \geq 200$	$ß_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5
KZX3/KKZX3/27KZX3	<1.0	<1.0	<2.0	4.7	5.8
KZX10/KKZX10/27KZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	27KZ1	336	KZW1	61		
KZ3	115	KKZ3	230	27KZ3	345	KZW3	64	KKZW3	128
KZ5	119	KKZ5	238	27KZ5	357	KZW5	63	KKZW5	126
KZ10	108	KKZ10	216	27KZ10	324	KZW10	57	KKZW10	114
KZ25	93	KKZ25	186	27KZ25	279	KZW25	79	KKZW25	158
KZX3	81*	KKZX3	163*	27KZX3	249*				
KZX10	90*	KKZX10	182*	27KZX10	279*				

* 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

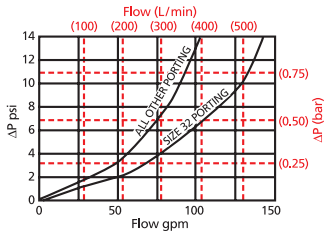
Flow Direction: Outside In

Element Nominal Dimensions: K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

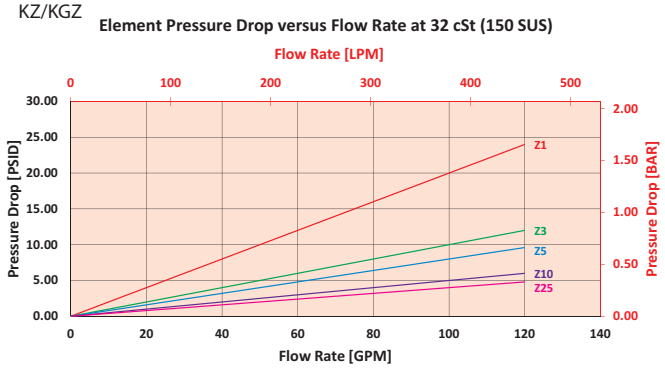
$\Delta P_{housing}$

KF30/KF50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

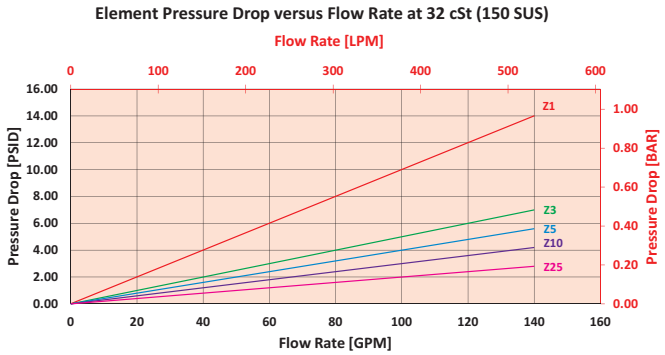


$\Delta P_{element}$

KZ/KGZ



KKZ/KKGZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 50 gpm (189.5 L/min) for KF301KZ10SD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 50 gpm. In this case, $\Delta P_{housing}$ is 3 psi (.21 bar) on the graph for the KF30 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm. In this case, $\Delta P_{element}$ is 2.5 psi (.17 bar) according to the graph for the KZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 3 psi [.21 bar] | $\Delta P_{element}$ = 2.5 psi [.17 bar]

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

ΔP_{filter} = 3 psi + (2.5 psi * 1.1) = 5.8 psi

OR

ΔP_{filter} = .21 bar + (.17 bar * 1.1) = .40 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
K3	0.25	2K3/ KK3	0.12	3KZ1/ 27KZ1	0.05
K10	0.09	2K10/ KK10	0.05	3KZ3/ 27KZ3	0.03
K25	0.02	2K25/ KK25	0.01	3KZ5/ 27KZ5	0.02
KAS3	0.10	2KAS3/ KKAS3	0.05	3KZ10/ 27KZ10	0.02
KAS5	0.08	2KAS5/ KKAS5	0.04	3KZ25/ 27KZ25	0.01
KAS10	0.05	2KAS10/ KKAS10	0.03	3K3	0.08
KZX10	0.22	2KZX10/ KKZX10	0.11	3K10	0.03
KZW1	0.43	2KZW1	-	3K25	0.01
KZW3	0.32	2KZW3/ KKZW3	0.16	3KAS3/ 27KAS3	0.03
KZW5	0.28	2KZW5/ KKZW5	0.14	3KAS5/ 27KAS5	0.02
KZW10	0.23	2KZW10/ KKZW10	0.12	3KAS10/ 27KAS10	0.02
KZW25	0.14	2KZW25/ KKZW25	0.07	3KAS25/ 27KAS25	0.07

KF30/KF50 Base-Ported Pressure Filter

Filter Model Number Selection

Highlighted product eligible for QuickDelivery

How to Build a Valid Model Number for a Schroeder KF30:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
KF30 –	–	–	–	–	–	–	–	–	–	

Example: NOTE: Only boxes 8 and 10 may contain more than one option

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	
GKF30 –	KG –	Z –	10 –	–	–	S –	–	D5 –	–	–	= GKF30Z10SD5

BOX 1 – Filter Series

- KF30
- KFN30 (Non-bypassing: requires ZX high collapse elements)
- GKF30 (GeoSeal®)
- KF50
- KFN50 (Non-bypassing: requires ZX high collapse elements)
- GKF50 (GeoSeal®)

BOX 2 – Number & Size of Elements

- 1 = K, KK, 27K
- 2 = K
- 3 = K

GeoSeal® Options

- 1 = KG, KKG, 27KKG
- 2 = KG
- 3 = KG

BOX 3 – Media Type

Omit =	E Media (Cellulose)
AS =	Anti-Stat Media (synthetic)
Z =	Excellement® Z-Media® (synthetic)
ZW =	Aqua-Excellement® ZW Media
ZX =	Excellement® Z-Media® (High Collapse centertube)
W =	W Media (water removal)
M =	Media (reusable metal mesh) N size only

BOX 4 – Micron Rating

1	= 1 Micron	(Z, ZW, ZX media)
3	= 3 Micron	(AS,E, Z, ZW, ZX media)
5	= 5 Micron	(AS, Z, ZW, ZX media)
10	= 10 Micron	(AS,E,M, Z, ZW, ZX media)
25	= 25 Micron	(E, M, Z, ZW, ZX media)
60	= 60 Micron	(M media)
150	= 150 Micron	(M media)
260	= 260 Micron	(M media)

BOX 5 – Seal Material

- Omit = Buna N
- V = Viton®
- H = EPR
- H.5 = Skydrol® compatibility

BOX 6 – Magnet Option

- Omit = None
- M = Magnet inserts (not available w/ indicator in cap)

BOX 7 – Porting

- P = 1 ½" NPTF
- P32 = 2" NPTF
- S = SAE-24
- F = 1 ½" SAE 4-bolt flange (KF30 Code 61) (KF50 Code 62)
- F32 = 2" SAE 4-bolt flange Code 61(KF30) *KF30 Only
- O = Subplate
- B24 = ISO 228 G-1 ½"

BOX 8 – Bypass

- Omit = 40 PSI Bypass
- X = Blocked bypass
- 50 = 50 psi bypass setting
- 60 = 60 psi bypass setting

(Omit Box 8 if non-bypassing filter is used)

BOX 9 – Test Point

- Omit = None
- L = Two ¼" NPTF inlet & outlet female test ports
- U = Series 1215 7/16 UNF Schroeder Check Test Point installed in cap (upstream)
- UU = Series 1215 7/16 UNF Schroeder Check Test Point installed in block (upstream and downstream)

BOX 10 – Dirt Alarm® Options

	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
	D5C =	D5 in cap
	D9 =	All stainless D5
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
	D8C =	D8 in cap
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ ½" conduit female connection
	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 11 – Additional Options

- Omit = None
- N = No-Element Indicator (not available w/ KFN30/KFN50/ GKF30/GKF50 or housings w/ indicator in cap)
- C = Electrical indicator in cap vs. in base standard
- G509 = Dirt Alarm and drain opposite standard
- G588 = Electric Switch and drain opposite standard

NOTES:

Box 2. Number of elements must equal 1 when using KK or 27K elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. ZW media not available in 27K length. For standard elements, a plastic connector SAP P/N: 7630900(LF-1997) is used to connect two or three K elements. For high collapse, a steel connector is required SAP P/N: 7608360 (LF-3255C).

Box 5. 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 7. For options F & F32, bolt depth .75" (19 mm).
For option O, O-rings included; hardware not included.

Box 8. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Box 9. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.

Box 10. Options N, are not available with KFN30, KFN50. N option should be used in conjunction with dirt alarm.

Base-Ported Pressure Filter TF50

Model No. of filter in photograph is TF502A10P.

Features and Benefits

- Base-ported pressure filter
- Can be installed in vertical or horizontal position
- Element changeout from top minimizes oil spillage
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Offered in conventional subplate porting

40 gpm
150 L/min
5000 psi
345 bar

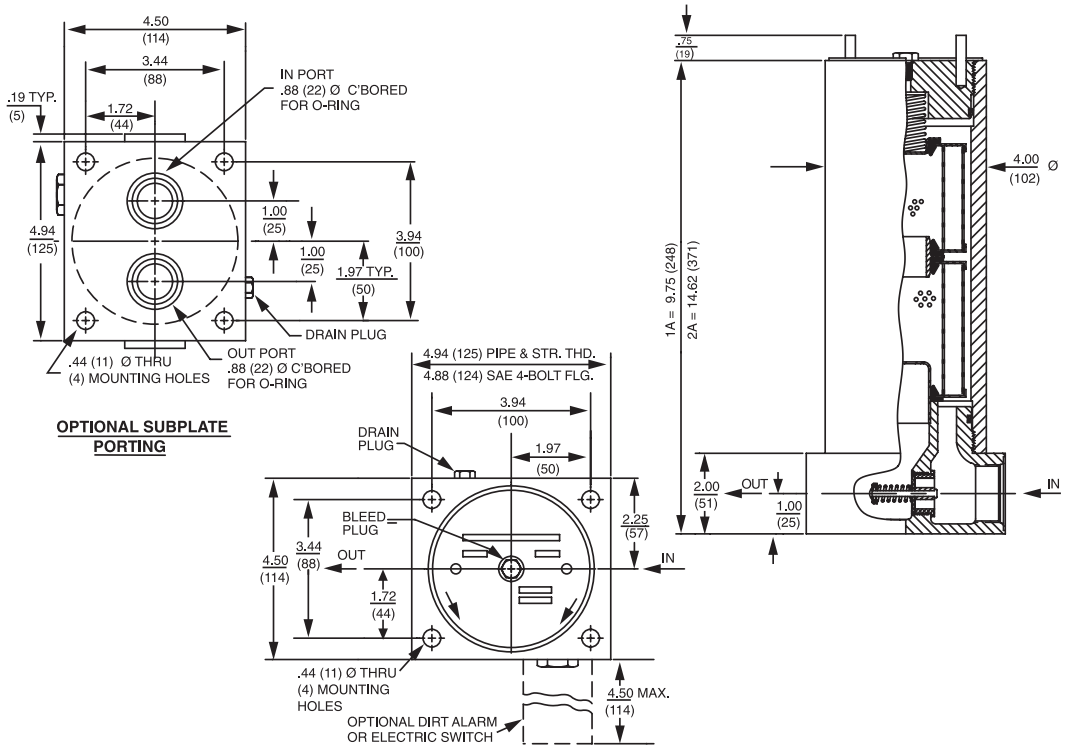
Filter Housing Specifications

Flow Rating:	Up to 40 gpm (150 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	15,000 psi (1035 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	3500 psi (240 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 69 psi (4.8 bar) Non-bypassing model has a blocked bypass.
Porting Base: Element Case & Cap:	Ductile Iron Steel
Weight of TF50-1A: Weight of TF50-2A:	24.4 lbs. (11.1 kg) 29.8 lbs. (13.5 kg)
Element Change Clearance:	8.50" (215 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation
Skydrol®	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)

TF50 Base-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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
AZ1	<1.0	<1.0	<1.0	<4.0	4.2
AZ3	<1.0	<1.0	<2.0	<4.0	4.8
AZ5	2.5	3.0	4.0	4.8	6.3
AZ10	7.4	8.2	10.0	8.0	10.0
AZ25	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	10.0

Element	DHC (gm)
AZ1	25
AZ3	26
AZ5	30
AZ10	28
AZ25	28
CCZX3	26*
CCZX10	28*

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

Flow Direction: Outside In

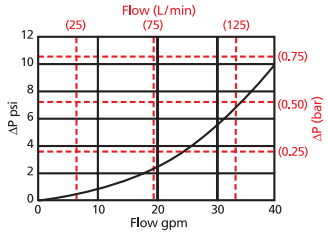
* Based on 100 psi terminal pressure

Element Nominal Dimensions: A: 3.0" (75 mm) O.D. x 4.5" (115 mm) long
CC: 3.0" (75 mm) O.D. x 9.5" (240 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

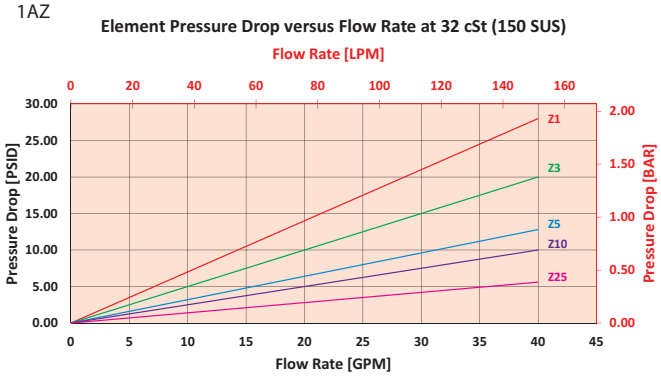
$\Delta P_{housing}$

TF50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

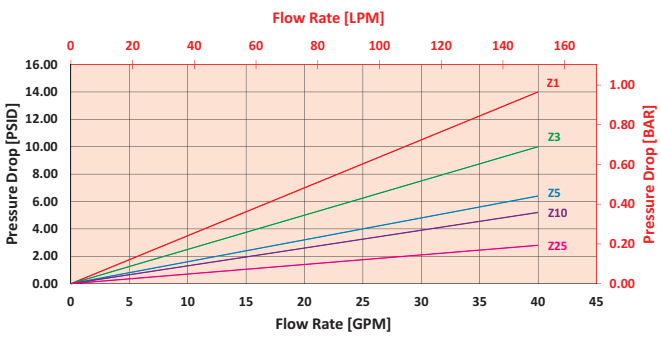


$\Delta P_{element}$

1AZ



2AZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 15 gpm (57 L/min) for TF501AZ10SD5 using 175 SUS (37.2 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 15 gpm. In this case, $\Delta P_{housing}$ is 1.8 psi (.12 bar) on the graph for the TF50 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 15 gpm. In this case, $\Delta P_{element}$ is 3.8 psi (.26 bar) according to the graph for the AZ10 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, ΔP_{filter}, is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 1.8 psi [.12 bar] | $\Delta P_{element}$ = 3.8 psi [.26 bar]

V_f = 175 SUS (37.2 cSt) / 150 SUS (32 cSt) = 1.2

ΔP_{filter} = 1.8 psi + (3.8 psi * 1.2) = 6.4 psi

OR

ΔP_{filter} = .12 bar + (.26 bar * 1.2) = .43 bar

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

Ele.	ΔP	Ele.	ΔP
A3	0.53	AA3	0.16
A10	0.36	AA10	0.18
A25	0.05	AA25	0.03
CCZX3	0.29		
CCZX10	0.26		

TF50 Base-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder TF50:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
TF50									

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	
TF50	1	AZ5			S		D5			= TF501AZ5SD5

BOX 1 — Filter Series

TF50	
TFN50	(Non-by-passing: requires ZX high collapse elements)

BOX 2 — Number

1	
2	(AZ elements only)

BOX 3 — Media Type

AZ1	= 1 µ Excellement® Z-Media® (synthetic)
AZ3	= 3 µ Excellement® Z-Media® (synthetic)
AZ5	= 5 µ Excellement® Z-Media® (synthetic)
AZ10	= 10 µ Excellement® Z-Media® (synthetic)
AZ25	= 25 µ Excellement® Z-Media® (synthetic)
CCZX1	= 1 µ Excellement® Z-Media® (high collapse center tube)
CCZX3	= 3 µ Excellement® Z-Media® (high collapse center tube)
CCZX5	= 5 µ Excellement® Z-Media® (high collapse center tube)
CCZX10	= 10 µ Excellement® Z-Media® (high collapse center tube)
CCZX25	= 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 4 — Seal Material

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

BOX 5 — Magnet option

Omit	= None
M	= Magnet inserts (not available w/ indicator in cap or TFN50)

BOX 6 — Porting

P	= 1" NPTF
S	= SAE-16
F	= 1" SAE 4-bolt flange Code 61
O	= Subplate
B	= ISO 228 G-1"

BOX 7 — Bypass

Omit	= 40 PSI Bypass
X	= Blocked bypass
50	= 50 psi bypass setting
60	= 60 psi bypass setting

BOX 8 — Test Points

L	= Two 1/4" NPTF inlet and outlet female test ports
U	= Series 1215 7/16 UNF Schroeder Check Test Point installation in cap (upstream)
UU	= Series 1215 7/16 UNF Schroeder Check Test Point installation in block (upstream and downstream)

BOX 9 — Dirt Alarm® Options

None	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
	D5C =	D5 in cap
	D9 =	All stainless D5
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
	D8C =	D8 in cap
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ 1/2" conduit female connection
	MS13 =	Supplied w/ threaded connector & light
	MS14 =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 10 — Additional Options

Omit	= None
N	= No-Element indicator (not available with TFN50)
G509	= Dirt alarm and drain opposite standard
G588	= Electrical switch and drain opposite standard

NOTES:

Box 7. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Base-Ported Pressure Filter KC50

Model No. of filter in photograph is KC501KZ10PD.

Features and Benefits

- Base-ported pressure filter
- Patented dirt-tolerant cap design
- Can be installed in vertical or horizontal position
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Ofered in pipe, SAE straight thread, flanged and ISO 228 porting
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Offered in conventional subplate porting
- Double and triple stacking of K-size elements can be replaced by single KK or 27K-size elements
- G Available with quality-protected GeoSeal® Elements (GKC50)

100/150 gpm
380/570 L/min
5000 psi
345 bar

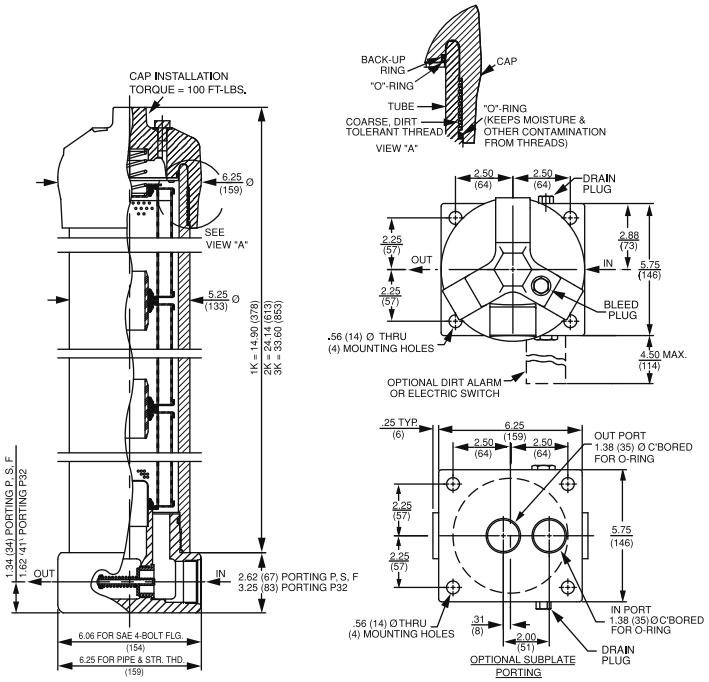
Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids With 2" porting only, up to 150 gpm (570 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	15,000 psi (1035 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	3500 psi (240 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Optional Cracking: 50 psi (3.5 bar) Full Flow: 61 psi (4.2 bar) Non-bypassing model has a blocked bypass.
Porting Base & Cap:	Ductile Iron
Element Case:	Steel
Weight of KF30-1K: Weight of KF30-2K: Weight of KF30-3K:	66.8 lbs. (30.3 kg) 87.8 lbs. (39.8 kg) 109.6 lbs. (49.7 kg)
Element Change Clearance:	8.50" (215 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E-Media (cellulose) and Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® Media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP® Media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic), and all ASP® Media
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic), and all ASP® Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

KC50 Base-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

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_x(c) \geq 200$	$ß_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5
KZX3/KKZX3/27KZX3	<1.0	<1.0	<2.0	4.7	5.8
KZX10/KKZX10/27KZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	27KZ1	336	KZW1	61		
KZ3	115	KKZ3	230	27KZ3	345	KZW3	64	KKZW3	128
KZ5	119	KKZ5	238	27KZ5	357	KZW5	63	KKZW5	126
KZ10	108	KKZ10	216	27KZ10	324	KZW10	57	KKZW10	114
KZ25	93	KKZ25	186	27KZ25	279	KZW25	79	KKZW25	158
KZX3	81*	KKZX3	163*	27KZX3	249*				
KZX10	90*	KKZX10	182*	27KZX10	279*				

* 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

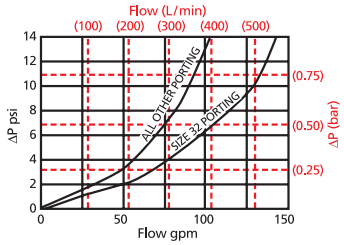
Flow Direction: Outside In

Element Nominal Dimensions:
K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

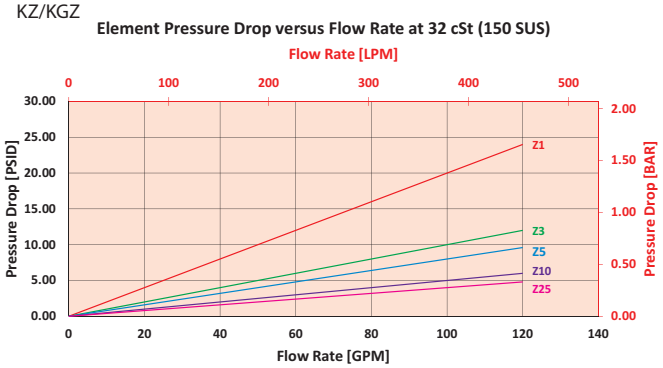
$\Delta P_{housing}$

KC50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

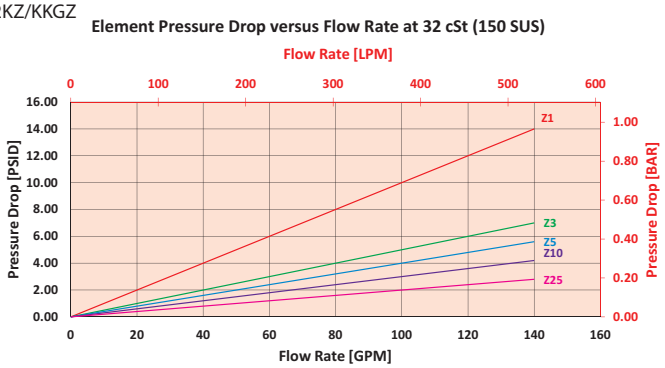


$\Delta P_{element}$

KZ/KGZ



2KZ/KKGZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 50 gpm (189.5 L/min) for KC501KZ10SD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 50 gpm. In this case, $\Delta P_{housing}$ is 3 psi (.21 bar) on the graph for the KC50 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm. In this case, $\Delta P_{element}$ is 2.5 psi (.17 bar) according to the graph for the KZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 3 psi [.21 bar] | $\Delta P_{element}$ = 2.5 psi [.17 bar]

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

ΔP_{filter} = 3 psi + (2.5 psi * 1.1) = 5.8 psi

OR

ΔP_{filter} = .21 bar + (.17 bar * 1.1) = .40 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
K3	0.25	2K3/ KK3	0.12	3KZ1/ 27KZ1	0.05
K10	0.09	2K10/ KK10	0.05	3KZ3/ 27KZ3	0.03
K25	0.02	2K25/ KK25	0.01	3KZ5/ 27KZ5	0.02
KAS3	0.10	2KAS3/ KKAS3	0.05	3KZ10/ 27KZ10	0.02
KAS5	0.08	2KAS5/ KKAS5	0.04	3KZ25/ 27KZ25	0.01
KAS10	0.05	2KAS10/ KKAS10	0.03	3K3	0.08
KZX10	0.22	2KZX10/ KKZX10	0.11	3K10	0.03
KZW1	0.43	2KZW1	-	3K25	0.01
KZW3	0.32	2KZW3/ KKZW3	0.16	3KAS3/ 27KAS3	0.03
KZW5	0.28	2KZW5/ KKZW5	0.14	3KAS5/ 27KAS5	0.02
KZW10	0.23	2KZW10/ KKZW10	0.12	3KAS10/ 27KAS10	0.02
KZW25	0.14	2KZW25/ KKZW25	0.07	3KAS25/ 27KAS25	0.07

KC50 Base-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder KC50:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
KC50	–	–	–	–	–	–	–	–	–	–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	
KC50	– 1K	– Z	– 10	–	–	– S	–	–	– D5	–	= KC501KZ10SD5

BOX 1 – Filter Series

- KC50
- KCN50 (Non-bypassing: requires ZX high collapse elements)
- GKC50 (GeoSeal®)
- WKC50 (Water)

BOX 2 – Number & Size of Elements

1	K, KK, 27K
2	K
3	K

GeoSeal® Options

1	KG, KKG, 27KG
2	KG
3	KG

BOX 3 – Media Type

Omit =	E Media (Cellulose) (KC50 only)
AS =	Anti-Stat Media (synthetic)
Z =	Excellement® Z-Media® (synthetic)
ZX =	Excellement® Z-Media® (High Collapse centertube) (KCN50 Only)
ZW =	Aqua-Excellement ZW Media (KC50 Only)
W =	W Media (water removal)
M =	Media (reusable metal mesh) (KC50 & KCN50 Only)

BOX 4 – Micron Rating

1	= 1 Micron	(Z, ZW, ZX media)
3	= 3 Micron	(AS,E, Z, ZW, ZX media)
5	= 5 Micron	(AS, Z, ZW, ZX media)
10	= 10 Micron	(AS,E,M, Z, ZW, ZX media)
25	= 25 Micron	(E,M, Z, ZW, ZX media)
60	= 60 Micron	(M media)
150	= 150 Micron	(M media)
260	= 260 Micron	(M media)

BOX 5 – Seal Material

- Omit = Buna N
- V = Viton®
- H = EPR
- H.5 = Skydrol® compatibility

BOX 6 – Magnet Option

- Omit = None
- M = Magnet inserts (not available w/ indicator in cap)

BOX 7 – Porting

P	= 1 ½" NPTF
P32	= 2" NPTF
S	= SAE-24
F	= 1 ½" SAE 4-bolt flange Code 62
O	= Subplate
B24	= ISO 228 G-1 ½"

BOX 8 – Bypass

- Omit = 40 PSI Bypass
- X = Blocked bypass
- 50 = 50 psi bypass setting

(Omit Box 8 if KCN50)

BOX 9 – Test Points

- Omit = None
- L = Two ¼" NPTF inlet & outlet female test ports
- U = Series 1215 7/16 UNF Schroeder Check Test Point installed in cap (upstream)
- UU = Series 1215 7/16 UNF Schroeder Check Test Point installed in block (upstream and downstream)

BOX 10 – Dirt Alarm® Options

None	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
	D5C =	D5 in cap
	D9 =	All stainless D5
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
	D8C =	D8 in cap
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ ½" conduit female connection
	MS13DC=	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 11 – Additional Options

- Omit = None
- N = No-Element Indicator (not available w/ KCN50 or GKC50 housings w/ indicator in cap)
- G509 = Dirt Alarm and drain opposite standard
- G588 = Electric Switch and drain opposite standard

NOTES:

Box 2. Number of elements must equal 1 when using KK or 27K elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. ZW media not available in 27K length. For standard elements, a plastic connector SAP P/N: 7630900 (LF-1997) is used to connect two or three K elements. For high collapse, a steel connector is required SAP P/N: 7608360 (LF-3255C).

Box 5. 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 7. For option F, bolt depth .75" (19 mm). For option O, O-rings included; hardware not included.

Box 8. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Box 10. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.

Box 11. Option N, are not available with KCN50/GKC50. N option should be used in conjunction with dirt alarm.

Base-Ported Pressure Filter

MKF50/ MKC50

Features and Benefits

- Base-ported high pressure dual filter manifold mounted
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Offered in pipe porting (contact factory for other porting options)
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Double and triple stacking of K-size elements can be replaced by single KK or 27K-size elements
- G Available with quality-protected GeoSeal® Elements (GMKF50)

200 gpm
760 L/min
5000 psi
345 bar

Model No. of filter in photograph are MKF504K10PD5 and MKC504K10PD5.

Filter Housing Specifications

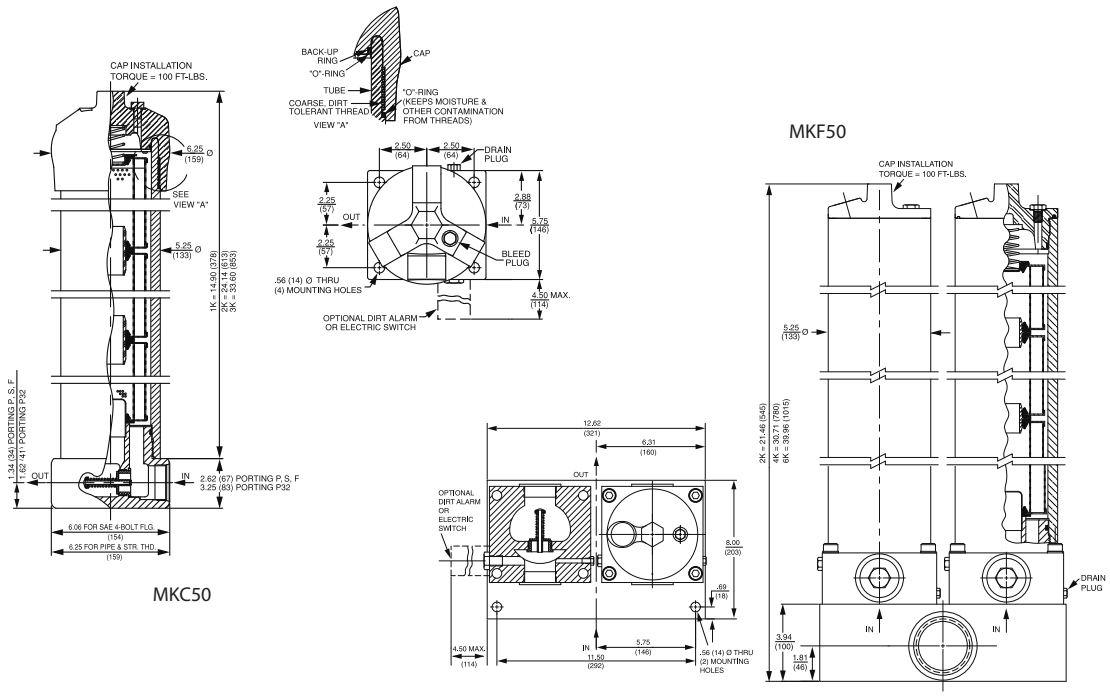
Flow Rating:	Up to 200 gpm (760 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	15,000 psi (1035 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	3500 psi (240 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Optional Cracking: 50 psi (3.5 bar) Full Flow: 61 psi (4.2 bar) Non-bypassing model has a blocked bypass.
Porting Base & Cap: Element Case:	Ductile Iron Steel
Weight of MKF50-2K: Weight of MKF50-4K: Weight of MKF50-6K: Weight of MKC50-2K: Weight of MKC50-4K: Weight of MKC50-6K:	214.0 lbs. (97.3 kg) 243.0 lbs. (110.2 kg) 284.4 lbs. (129.0 kg) 216.0 lbs. (98.0 kg) 245.0 lbs. (111.1 kg) 286.4 lbs. (129.9 kg)
Element Change Clearance:	8.50" (215 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E-Media (cellulose) and Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® Media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP® Media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic), and all ASP® Media
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic), and all ASP® Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

MKF50/ MKC50

Base-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

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_x(c) \geq 200$	$ß_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5
KZX3/KKZX3/27KZX3	<1.0	<1.0	<2.0	4.7	5.8
KZX10/KKZX10/27KZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	27KZ1	336	KZW1	61		
KZ3	115	KKZ3	230	27KZ3	345	KZW3	64	KKZW3	128
KZ5	119	KKZ5	238	27KZ5	357	KZW5	63	KKZW5	126
KZ10	108	KKZ10	216	27KZ10	324	KZW10	57	KKZW10	114
KZ25	93	KKZ25	186	27KZ25	279	KZW25	79	KKZW25	158
KZX3	81*	KKZX3	163*	27KZX3	249*				
KZX10	90*	KKZX10	182*	27KZX10	279*				

* 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

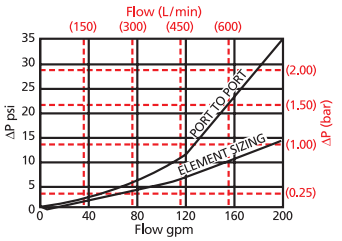
Element Nominal Dimensions: K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

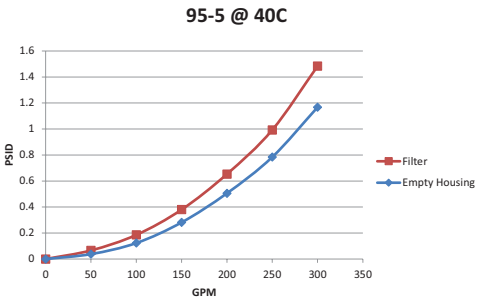
Pressure Drop Information

Based on Flow Rate and Viscosity

$\Delta P_{housing}$

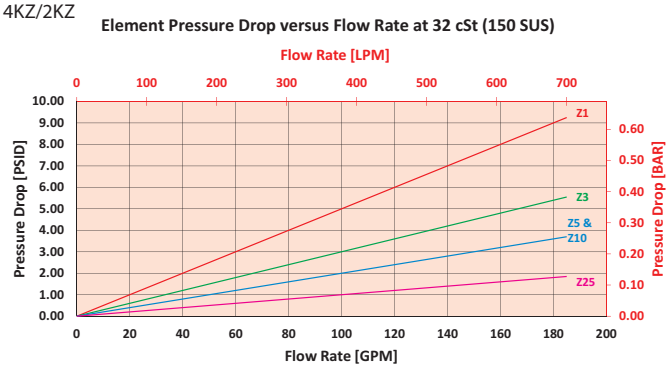
MKF50/MKC50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



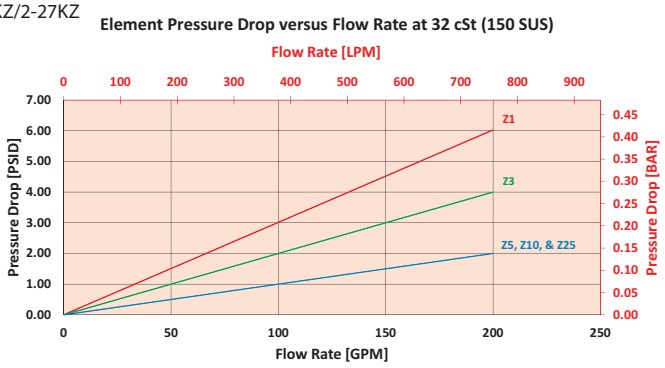


$\Delta P_{element}$

4KZ/2KZ



6KZ/2-27KZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 100 gpm (379 L/min) for MKF504KZ10PD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 100 gpm. In this case, $\Delta P_{housing}$ is 8 psi (.55 bar) on the graph for the MKF50 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 100 gpm. In this case, $\Delta P_{element}$ is 8 psi (.14 bar) according to the graph for the KZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 8 psi [.55 bar] | $\Delta P_{element}$ = 2 psi [.14 bar]

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

ΔP_{filter} = 8 psi + (2 psi * 1.1) = 10.2 psi

OR

ΔP_{filter} = .55 bar + (.14 bar * 1.1) = .70 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
2KZ1	0.10	2K3	0.12	4K3/ KK3	0.06
2KZ3	0.05	2K10	0.05	4K10/ KK10	0.02
2KZ5	0.04	2K25	0.01	4K25/ KK25	0.01
2KZ10	0.03	2KAS3	0.05	4KAS3/ KKAS3	0.03
2KZ25	0.02	2KAS5	0.04	4KAS5/ KKAS5	0.02
KZW1	0.43	2KAS10	0.03	4KAS10/ KKAS10	0.02
KZW3	0.32	2KZX10	0.11	4KZX10	0.06
KZX5	0.28	2KZW3	0.16	6KAS3/ 27KAS3	0.02
KZW10	0.23	2KZW5	0.14	6KAS5/ 27KAS5	0.01
KZW25	0.14	2KZW10	0.12	6KAS10/ 27KAS10	0.01
		2KZW25	0.07	6KZX10	0.04

MKF50/ MKC50

Base-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder MFK50:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
MKF50 –		–		–		–		–	

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	
MKF50 –	2K –	Z –	10 –		P –			D5 –		= MKF502KZ10PD5

BOX 1 – Filter Series

- MKF50
- MKFN50 (Non-bypassing: requires ZX high collapse elements)
- GMKF50 (GeoSeal®)
- MKC50
- MKCN50 (Non-bypassing: requires ZX high collapse elements)
- WKC50 (Water)

BOX 2 – Number & Size of Elements

2	K, KK, 27K
4	K
6	K
GeoSeal® Options	
2	KG, KKG, 27KG
4	KG
6	KG

BOX 3 – Media Type

Omit =	E Media (Cellulose) (MKF50 only)
AS =	Anti-Stat Media (synthetic)
Z =	Excellement® Z-Media® (synthetic)
ZX =	Excellement® Z-Media® (High Collapse centertube) (MKFN50 Only)
ZW =	Aqua-Excellement ZW Media (MKF50 Only)
W =	W Media (water removal)
M =	Media (reusable metal mesh) (MKF50 & MKFN50 Only)

BOX 4 – Micron Rating

1	= 1 Micron	(DZ, Z, ZW, ZX media)
3	= 3 Micron	(AS,DZ, E, Z, ZW, ZX media)
5	= 5 Micron	(AS, DZ, Z, ZW, ZX media)
10	= 10 Micron	(AS, DZ, E, M, Z, ZW, ZX media)
25	= 25 Micron	(E, DZ, M, Z, ZW, ZX media)
60	= 60 Micron	(M media)
150	= 150 Micron	(M media)
260	= 260 Micron	(M media)

BOX 5 – Seal Material

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

BOX 6 – Porting

P	= 2½" NPTF
F40	= 2½" SAE 4-bolt flange Code 61
F32	= 2" SAE bolt flange Code 61
P32	= 2" NPTF
B32	= ISO 228 G-2"

BOX 7 – Bypass

Omit	= None
X	= Blocked bypass
50	= 50 PSI Bypass (Omit Box 7 if a non-bypassing filter is used)

BOX 8 – Test points

Omit	= None
L	= Two ¼" NPTF inlet and outlet female test ports
U	= Series 1215 7/16 UNF Schroeder Check Test Point installed in cap (upstream)

BOX 9 – Dirt Alarm® Options

None	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
	D5C =	D5 in cap
	D9 =	All stainless D5
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
	D8C =	D8 in cap
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ ½" conduit female connection
	MS13 =	Supplied w/ threaded connector & light
	MS14 =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 10 – Additional Options

Omit	= None
N	= No-Element Indicator (not available w/ MKFN30/MKCN50 or housings w/ indicator in cap)

NOTES:

Box 2. Number of elements must equal 2 when using KK or 27K elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. ZW media not available in 27K length. For standard elements, a plastic connector SAP P/N: 7630900 (LF-1997) is used to connect two or three K elements. For high collapse, a steel connector is required SAP P/N: 7608360 (LF-3255C).

Box 5. 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 7. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Box 9. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.

Box 10. N option should be used in conjunction with dirt alarm.

Base-Ported Pressure Filter KC65

Model No. of filter in photograph is KC651K10FD9.

Features and Benefits

- Base-ported high pressure filter
- Patented dirt-tolerant cap design
- Can be installed in vertical or horizontal position
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Offered in flanged porting
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Double and triple stacking of K-size element can be replaced by single KK or 27K-size element
- G Available with quality-protected GeoSeal® Elements (GKC65)

100 gpm
380 L/min
6500 psi
450 bar

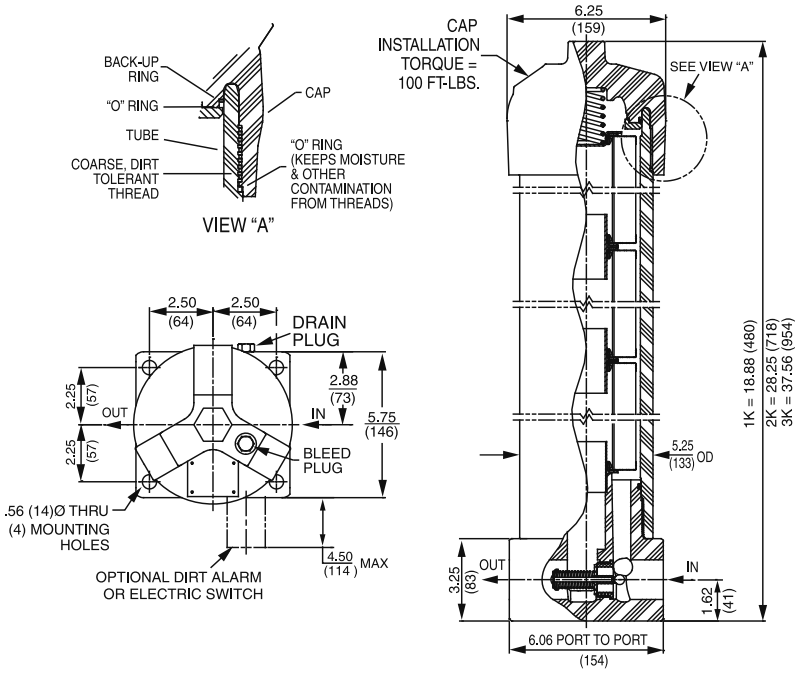
Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6500 psi (450 bar)
Min. Yield Pressure:	19,500 psi (1345 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	5000 psi (345 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 75 psi (5.2 bar) Non-bypassing model has a blocked bypass.
Porting Base & Cap: Element Case:	Ductile Iron Steel
Weight of KC65-1K: Weight of KC65-2K: Weight of KC65-3K:	80 lbs. (36.3 kg) 102 lbs. (46.3 kg) 124 lbs. (56.3 kg)
Element Change Clearance:	8.50" (215 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose) and Z-Media® (synthetic)
High Water Content	All Z-Media® and ASP® Media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP® Media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP® Media (synthetic)
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) and ASP® Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

KC65 Base-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

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_x(c) \geq 200$	$ß_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5
KZX3/KKZX3/27KZX3	<1.0	<1.0	<2.0	4.7	5.8
KZX10/KKZX10/27KZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	27KZ1	336	KZW1	61		
KZ3	115	KKZ3	230	27KZ3	345	KZW3	64	KKZW3	128
KZ5	119	KKZ5	238	27KZ5	357	KZW5	63	KKZW5	126
KZ10	108	KKZ10	216	27KZ10	324	KZW10	57	KKZW10	114
KZ25	93	KKZ25	186	27KZ25	279	KZW25	79	KKZW25	158
KZX3	81*	KKZX3	163*	27KZX3	249*				
KZX10	90*	KKZX10	182*	27KZX10	279*				

* 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

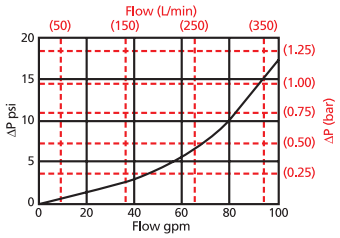
Flow Direction: Outside In

Element Nominal Dimensions:
K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

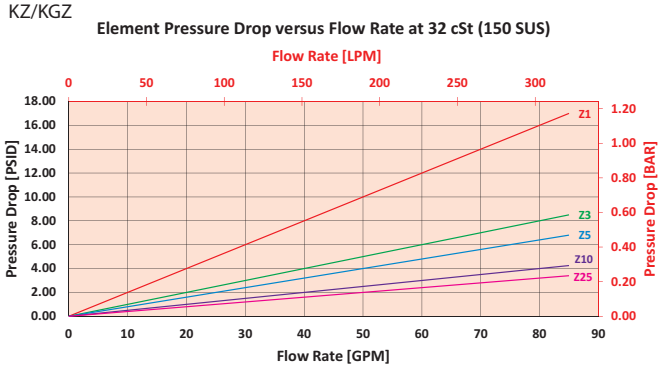
$\Delta P_{housing}$

KC65 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

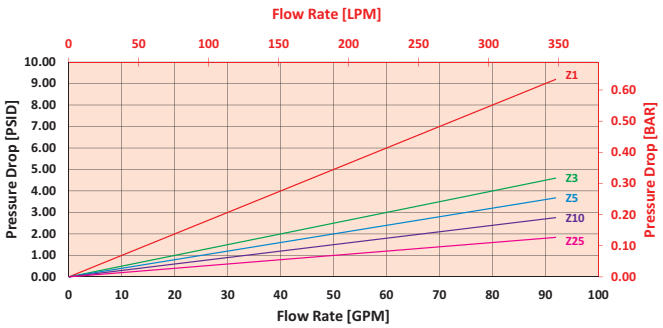


$\Delta P_{element}$

KZ/KGZ



2KZ/KKZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 50 gpm (189.5 L/min) for KC651KZ10FD9 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 50 gpm. In this case, $\Delta P_{housing}$ is 4 psi (.27 bar) on the graph for the KC65 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm. In this case, $\Delta P_{element}$ is 2.5 psi (.17 bar) according to the graph for the KZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 4 psi [.27 bar] | $\Delta P_{element}$ = 2.5 psi [.17 bar]

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

ΔP_{filter} = 4 psi + (2.5 psi * 1.1) = 6.8 psi

OR

ΔP_{filter} = .27 bar + (.17 bar * 1.1) = .46 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
K3	0.25	2K3/ KK3	0.12	3KZ1/ 27KZ1	0.05
K10	0.09	2K10/ KK10	0.05	3KZ3/ 27KZ3	0.03
K25	0.02	2K25/ KK25	0.01	3KZ5/ 27KZ5	0.02
KAS3	0.10	2KAS3/ KKAS3	0.05	3KZ10/ 27KZ10	0.02
KAS5	0.08	2KAS5/ KKAS5	0.04	3KZ25/ 27KZ25	0.01
KAS10	0.05	2KAS10/ KKAS10	0.03	3K3	0.08
KZX10	0.22	2KZX10/ KKZX10	0.11	3K10	0.03
KZW1	0.43	2KZW1	-	3K25	0.01
KZW3	0.32	2KZW3/ KKZX3	0.16	3KAS3/ 27KAS3	0.03
KZW5	0.28	2KZW5/ KKZX5	0.14	3KAS5/ 27KAS5	0.02
KZW10	0.23	2KZW10/ KKZX10	0.12	3KAS10/ 27KAS10	0.02
KZW25	0.14	2KZW25/ KKZX25	0.07	3KZX10/ 27KZX10	0.07

KC65 Base-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder KC65:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11
KC65 –	–	–	–	–	–	–	–	–	–	

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	
KC65 –	1K –	Z –	10 –	–	–	F –	–	–	D5 –		= KC651KZ10FED5

BOX 1 – Filter Series

- KC65
- KCN65 (Non-bypassing: requires ZX high collapse elements)
- GKC65 (GeoSeal®)

BOX 2 – Number & Size of Elements

1	K, KK, 27K
2	K

GeoSeal® Options

1	KG, KKG, 27KG
2	KG
3	KG

BOX 3 – Media Type

Omit =	E Media (Cellulose)
AS =	Anti-Stat Media (synthetic)
Z =	Excellement® Z-Media® (synthetic)
ZX =	Excellement® Z-Media® (High Collapse centertube) (KCN65 Only)
ZW =	Aqua-Excellement ZW Media (KC65 Only)
W =	W Media (water removal)
M =	Media (reusable metal mesh) (KC65 & KCN65 Only)

BOX 4 – Micron Rating

1 = 1 Micron	(Z, ZW, ZX media)
3 = 3 Micron	(AS, E, Z, ZW, ZX media)
5 = 5 Micron	(AS, Z, ZW, ZX media)
10 = 10 Micron	(AS, E, M, Z, ZW, ZX media)
25 = 25 Micron	(E, M, Z, ZW, ZX media)
60 = 60 Micron	(M media)
150 = 150 Micron	(M media)
260 = 260 Micron	(M media)

BOX 5 – Seal Material

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

BOX 6 – Magnet Option

Omit	= None
M	= Magnet inserts (not available w/ indicator in cap)

BOX 7 – Porting

F = 1 ½" SAE 4-bolt flange Code 62

BOX 8 – Bypass

Omit	= 40 PSI Bypass
X	= Blocked bypass
50	= 50 psi bypass setting

(Omit Box 8 if a KCN65 is selected)

BOX 9 – Test Points

Omit	= None
L	= Two ¼" NPTF inlet & outlet female test ports
U	= Series 1215 7/16 UNF Schroeder Check Test Point installed in cap (upstream)
UU	= Series 1215 7/16 UNF Schroeder Check Test Point installed in block (upstream and downstream)

BOX 10 – Dirt Alarm® Options

None	Omit =	None
Visual	D9 =	All stainless D5
Electrical	MS5SS =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5SSLC =	Low current MS5
	MS10SS =	Electrical w/ DIN connector (male end only)
	MS10SSLC =	Low current MS10
	MS11SS =	Electrical w/ 12 ft. 4-conductor wire
	MS12SS=	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12SSLC =	Low current MS12
	MS16SS =	Electrical w/ weather-packed sealed connector
	MS16SSLC =	Low current MS16
	MS17SSLC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ ½" conduit female connection
	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 11 – Additional Options

Omit	= None
N	= No-Element Indicator (not available w/ KFN65 or housings w/ indicator in cap)
G509	= Dirt Alarm and drain opposite standard

NOTES:

Box 2. Number of elements must equal 1 when using KK or 27K elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. ZW media not available in 27K length. For standard elements, a plastic connector SAP P/N: 7630900 (LF-1997) is used to connect two or three K elements. For high collapse, a steel connector is required SAP P/N: 7608360 (LF-3255C).

Box 5. 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.

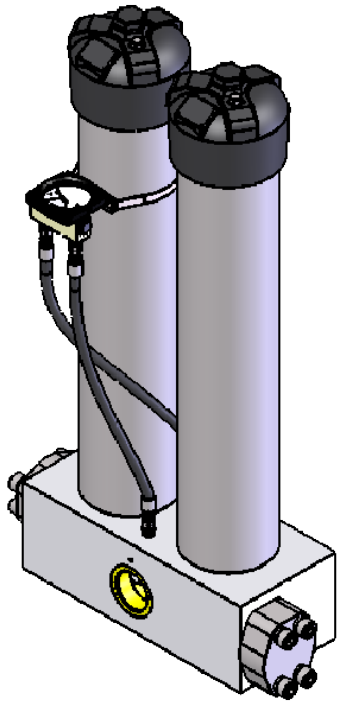
Box 7. For option F, bolt depth 1.12" (30 mm).

Box 8. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Box 10. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.

Box 11. Option N is not available with KCN65. N option should be used in conjunction with dirt alarm.

Base-Ported Pressure Filter MKC65



Model No. of filter in photograph is MKC654K10BD5.

Features and Benefits

- Base-ported high pressure dual filter manifold mounted
- Meets HF4 automotive standard
- Element changeout from top minimizes oil spillage
- Offered in pipe porting (contact factory for other porting options)
- No-Element indicator option available
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Double and triple stacking of K-size elements can be replaced by single KK or 27K-size elements

200 gpm
760 L/min
300 gpm*
1,136 L/min*
6000 psi
413 bar

Filter Housing Specifications

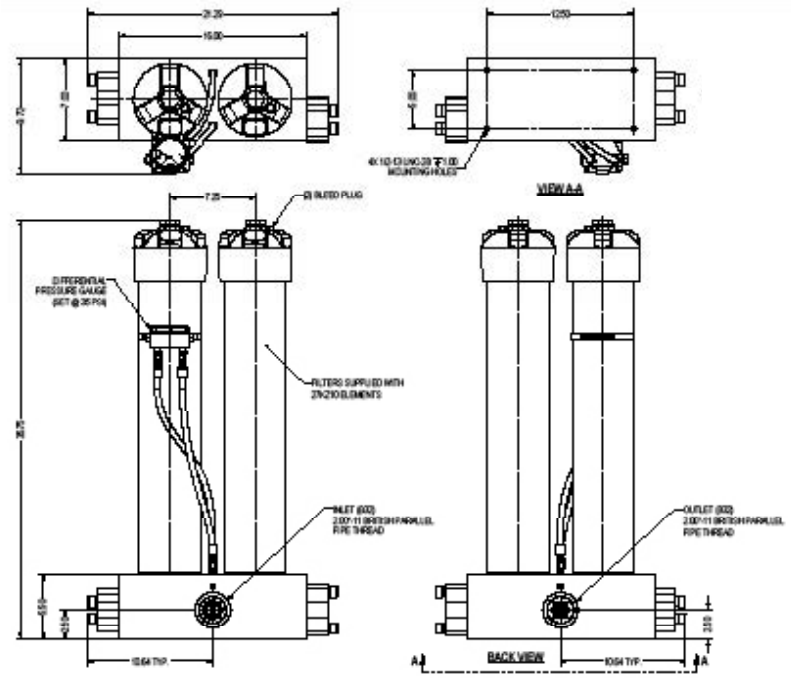
Flow Rating:	Up to 200 gpm (760 L/min) for 150 SUS (32 cSt) fluids Up to 300 gpm (1,136 L/min) for Water/Oil Emulsions
Max. Operating Pressure:	6000 psi (413 bar)
Min. Yield Pressure:	18,000 psi (1240 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	4500 psi (310 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Optional Cracking: 50 psi (3.5 bar) Full Flow: 61 psi (4.2 bar) Non-bypassing model has a blocked bypass.
Porting Base & Cap: Element Case:	Ductile Iron Steel
Weight of MKC65-2K: Weight of MKC65-4K: Weight of MKC65-6K:	216.0 lbs. (98.0 kg) 245.0 lbs. (111.1 kg) 286.4 lbs. (129.9 kg)
Element Change Clearance:	8.50" (215 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E-Media (cellulose) and Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® and ASP® Media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP® Media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic), and all ASP® Media
Phosphate Esters	All Z-Media® and ASP® Media (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic), and all ASP® Media (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

*Rated for Water/Oil Emulsions

MKC65 Base-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

Element	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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5
KZX3/KKZX3/27KZX3	<1.0	<1.0	<2.0	4.7	5.8
KZX10/KKZX10/27KZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	27KZ1	336	KZW1	61		
KZ3	115	KKZ3	230	27KZ3	345	KZW3	64	KKZW3	128
KZ5	119	KKZ5	238	27KZ5	357	KZW5	63	KKZW5	126
KZ10	108	KKZ10	216	27KZ10	324	KZW10	57	KKZW10	114
KZ25	93	KKZ25	186	27KZ25	279	KZW25	79	KKZW25	158
KZX3	81*	KKZX3	163*	27KZX3	249*				
KZX10	90*	KKZX10	182*	27KZX10	279*				

* Based on 100 psi termianl pressure

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

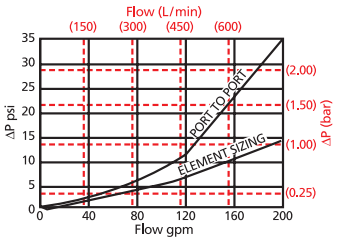
Flow Direction: Outside In

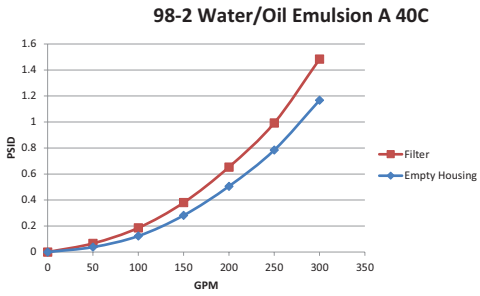
Element Nominal Dimensions: K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

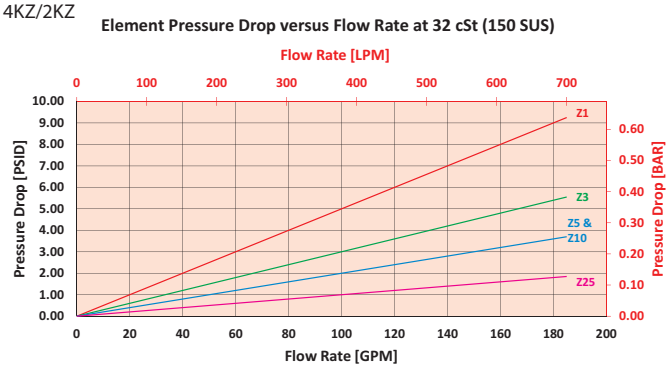
MKC65 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



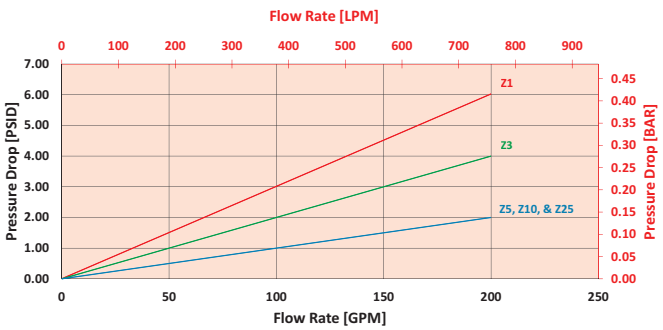


$\Delta P_{element}$

4KZ/2KZ



6KZ/2-27KZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 100 gpm (379 L/min) for MKC654KZ10PD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 100 gpm. In this case, $\Delta P_{housing}$ is 8 psi (.55 bar) on the graph for the MKC65 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 100 gpm. In this case, $\Delta P_{element}$ is 8 psi (.14 bar) according to the graph for the KZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 8 psi [.55 bar] | $\Delta P_{element}$ = 2 psi [.14 bar]

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

ΔP_{filter} = 8 psi + (2 psi * 1.1) = 10.2 psi

OR

ΔP_{filter} = .55 bar + (.14 bar * 1.1) = .70 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
2KZ1	0.10	2K3	0.12	4K3/ KK3	0.06
2KZ3	0.05	2K10	0.05	4K10/ KK10	0.02
2KZ5	0.04	2K25	0.01	4K25/ KK25	0.01
2KZ10	0.03	2KAS3	0.05	4KAS3/ KKAS3	0.03
2KZ25	0.02	2KAS5	0.04	4KAS5/ KKAS5	0.02
KZW1	0.43	2KAS10	0.03	4KAS10/ KKAS10	0.02
KZW3	0.32	2KZX10	0.11	4KZX10	0.06
KZX5	0.28	2KZW3	0.16	6KAS3/ 27KAS3	0.02
KZW10	0.23	2KZW5	0.14	6KAS5/ 27KAS5	0.01
KZW25	0.14	2KZW10	0.12	6KAS10/ 27KAS10	0.01
		2KZW25	0.07	6KZX10	0.04

MKC65 Base-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder MKC65:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
MKC65 –		–		–		–		–	

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	
MKC65 –	2K –	Z –	10 –		B –			D5 –		= MKC652KZ10BD5

BOX 1 – Filter Series

MKC65

BOX 2 – Number & Size of Elements

2	K, KK, 27K
4	K
6	K
GeoSeal® Options	
2	KG, KKG, 27KG
4	KG
6	KG

BOX 3 – Media Type

Omit =	E Media (Cellulose)
AS =	Anti-Stat Media (synthetic)
Z =	Excellement® Z-Media® (synthetic)
ZX =	Excellement® Z-Media® (High Collapse centertube)
ZW =	Aqua-Excellement ZW Media
W =	W Media (water removal)
M =	Media (reusable metal mesh)

BOX 4 – Micron Rating

1	= 1 Micron	(DZ, Z, ZW, ZX media)
3	= 3 Micron	(AS,DZ, E, Z, ZW, ZX media)
5	= 5 Micron	(AS, DZ, Z, ZW, ZX media)
10	= 10 Micron	(AS, DZ, E, M, Z, ZW, ZX media)
25	= 25 Micron	(E, DZ, M, Z, ZW, ZX media)
60	= 60 Micron	(M media)
150	= 150 Micron	(M media)
260	= 260 Micron	(M media)

BOX 5 – Seal Material

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

BOX 6 – Porting Option

B = 2" BSPP

BOX 7 – Bypass

Omit	= 40 PSI Bypass
X	= Blocked bypass
50	= 50 PSI Bypass

(Omit Box 7 if non bypassing unit)

BOX 8 – Test Points

L	= Two ¼" NPTF inlet and outlet female test ports
U	= Series 1215 7/16 UNF Schroeder Check Test Point installed in cap (upstream)

BOX 9 – Dirt Alarm® Options

None	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
	D5C =	D5 in cap
	D9 =	All stainless D5
	DPG =	Differential pressure gauge
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
	D8C =	D8 in cap
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ ½" conduit female connection
	MS13 =	Supplied w/ threaded connector & light
	MS14 =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 10 – Additional Options

Omit	= None
N	= No-Element Indicator

NOTES:

Box 2. Number of elements must equal 2 when using KK or 27K elements. Replacement element part numbers are identical to contents of Boxes 2, 3, 4 and 5. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. ZW media not available in 27K length. For standard elements, a plastic connector SAP P/N: 7630900 (LF-1997) is used to connect two or three K elements. For high collapse, a steel connector is required SAP P/N: 7608360 (LF-3255C).

Box 5. 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 7. When X is paired with a standard filter series, a standard bushing and spring plate will be used.

Box 9. Standard indicator setting for non-bypassing model is 50 psi unless otherwise specified.

Box 10. N option should be used in conjunction with dirt alarm.

Hydrostatic Top-Ported Pressure Filter

HS60/ MHS60

120 gpm
450 L/min
6000 psi
415 bar

Features and Benefits

- Full flow reverse flow check valve diverts flow past the element in hydrostatic applications
- Top-ported design capable of handling 100 gpm flow
- Offered in SAE straight thread and flange porting
- Thread on bowl with drain plug for easy element service
- 6000 psi cyclic
- Certified for Offshore Standard DNVGL-OS-D101 "Marine and Machinery Systems and Equipment"
- Contact factory for higher flow applications

Model No. of filters in photograph are HS6013HZ3F24 and MHS6013HZ3F24.

Filter Housing Specifications

Flow Rating:	Up to 120 gpm (450 L/min)
Max. Operating Pressure:	6000 psi (415 bar) only for flange ported models
Min. Yield Pressure:	Contact factory
Rated Fatigue Pressure:	6000 psi (415 bar) (only with 4-bolt flange porting)
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 87 psi (5.9 bar)
Porting Head: Element Case:	Ductile Iron Steel
Weight of HS60-13H: Weight of MHS60:	75 lbs. (34.2 kg) 160 lbs. (72.6 kg)
Element Change Clearance:	4.0" (103 mm)

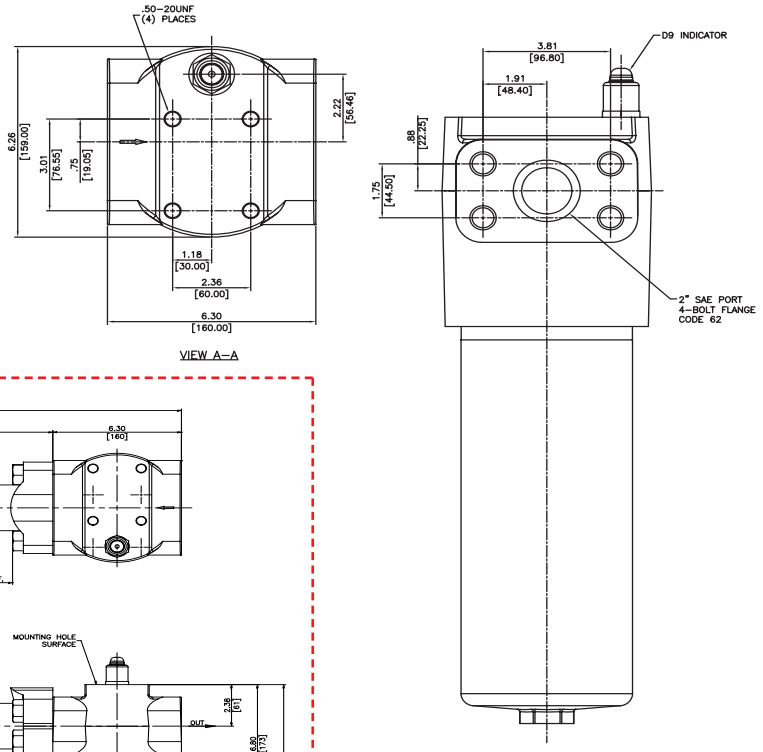
Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation

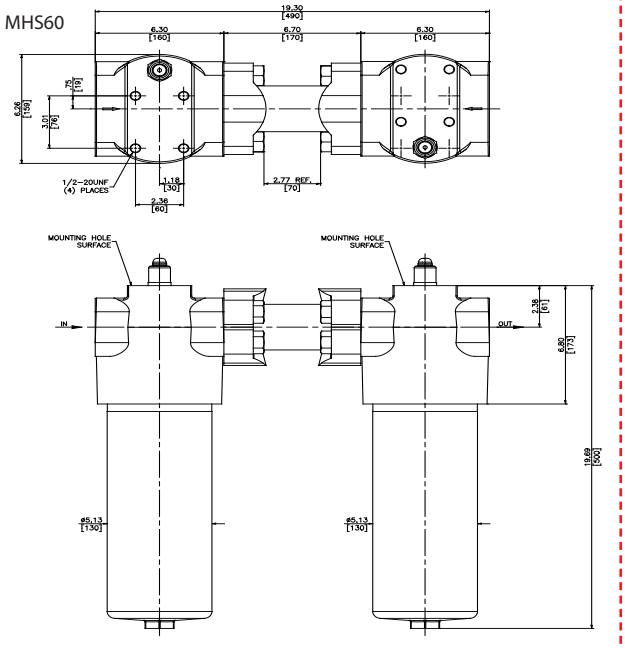
HS60/ MHS60

Hydrostatic Top-Ported Pressure Filter

HS60



MHS60



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

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
13HZ3/13HZX3	<1.0	<1.0	<2.0	<4.0	4.8
13HZ5/13HZX5	2.5	3.0	4.0	4.8	6.3
13HZ10/13HZX10	7.4	8.2	10.0	8.0	10.0
13HZ25/13HZX25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)
13HZ3	100.7	13HZX3	75.7
13HZ5	113.2	13HZX5	74.1
13HZ10	119.7	13HZX10	81.4
13HZ25	123.5	13HZX25	92.9

Element Collapse Rating: 290 psi (20 bar) for standard elements
3045 psi (210 bar) for high collapse (ZX) versions

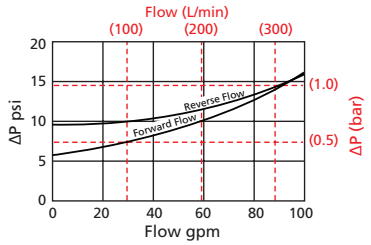
Flow Direction: Outside In

Element Nominal Dimensions: 13HZ : 3.5" (90 mm) O.D. x 13" (325 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

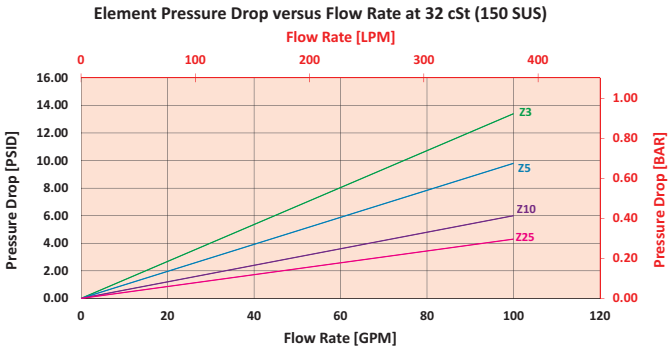
$\Delta P_{housing}$

HS60/MHS60 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

13HZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 30 gpm (113.7 L/min) for HS6013HZ10S24D13 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 30 gpm. In this case, $\Delta P_{housing}$ is 7 psi (.48 bar) on the graph for the HS60 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 30 gpm. In this case, $\Delta P_{element}$ is 2 psi (.14 bar) according to the graph for the 13HZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 7 psi [.48 bar] | $\Delta P_{element}$ = 2 psi [.14 bar]

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

ΔP_{filter} = 7 psi + (2 psi * 1.1) = 9.2 psi

OR

ΔP_{filter} = .48 bar + (.14 bar * 1.1) = .63 bar

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

Ele.	ΔP
13HZX3	0.176
13HZX5	0.104
13HZX10	0.054
13HZX25	0.048

HS60/ MHS60

Hydrostatic Top-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder HS60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
HS60 –		–	–	–

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
HS60 –	13HZ3 –		F24 –	D13	= HS6013HZ3F24D13

BOX 1

Filter Series
HS60
HSN60 (Non-bypassing: requires ZX high collapse elements)
MHS60
MHSN60 (Non-bypassing: requires ZX high collapse elements)

BOX 2

Element Part Number	
13HZ3	= 3 µ Excellement® Z-Media® (synthetic)
13HZ5	= 5 µ Excellement® Z-Media® (synthetic)
13HZ10	= 10 µ Excellement® Z-Media® (synthetic)
13HZ25	= 25 µ Excellement® Z-Media® (synthetic)
13HZX3	= 3 µ Excellement® Z-Media® (high collapse center tube)
13HZX5	= 5 µ Excellement® Z-Media® (high collapse center tube)
13HZX10	= 10 µ Excellement® Z-Media® (high collapse center tube)
13HZX25	= 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 3

Seal Material	
Omit	= Buna N
V	= Viton®
H	= EPR

BOX 4

Porting Options	
S24	= SAE-24
F24	= 1½" SAE 4-bolt flange Code 62
F32	= 2"SAE 4-bolt flange Code 62

BOX 5

Dirt Alarm® Options		
None	Omit =	None
Visual	D13 =	Visual pop-up
Electrical	MS5SS =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5SSLC =	Low current MS5
	MS10SS =	Electrical w/ DIN connector (male end only)
	MS10SSLC =	Low current MS10
	MS11SS =	Electrical w/ 12 ft. 4-conductor wire
	MS12SS=	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12SSLC =	Low current MS12
	MS16SS =	Electrical w/ weather-packed sealed connector
	MS16SSLC =	Low current MS16
	MS17SSLC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	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
	MS17SSLCT =	Low current MS17T
Electrical Visual	MS13SS =	Supplied w/ threaded connector & light
	MS14SS =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13SSDCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13SSDCLCT =	Low current MS13DCT
	MS14SSDCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14SSDCLCT =	Low current MS14DCT

NOTES:

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

Box 3. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 5. All Dirt Alarm® Indicators must be Stainless Steel. Standard indicator setting is 75 psi. For replacement indicators, contact the factory.

Hydrostatic Base-Ported Filter KFH50

Model No. of filter in photograph is KFH501K10SD5.

Features and Benefits

- Base-ported Hydrostatic high pressure filter
- Hydrostatic transmission filter for reversing loop systems
- Filters in the "in to out" direction, bypasses in reverse direction
- Element changeout from top minimizes oil spillage
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- Integral inlet and outlet female test points option available
- Offered in conventional subplate porting
- Completion of application questionnaire a requirement L-2549 (contact factory)
- Double and triple stacking of K-size elements can be replaced by single KK or 27K-size elements

70 gpm
265 L/min
5000 psi
345 bar

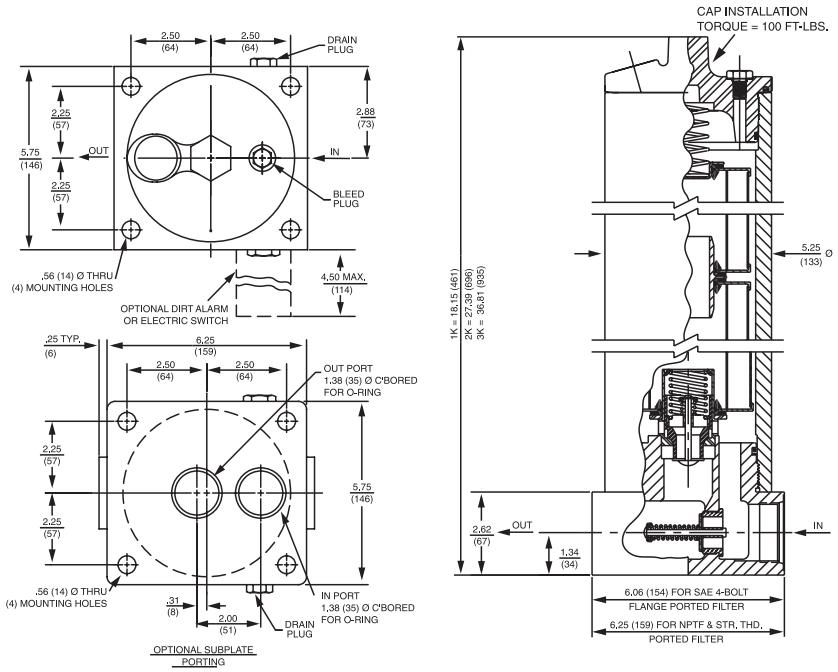
Filter Housing Specifications

Flow Rating:	Up to 70 gpm (265 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	15,000 psi (1035 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	3500 psi (240 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 61 psi (4.2 bar)
Porting Base & Cap: Element Case:	Ductile Iron Steel
Weight of KFH50-1K: Weight of KFH50-2K: Weight of KFH50-3K:	60.0 lbs. (27.2 kg) 80.3 lbs. (36.4 kg) 100.5 lbs. (45.6 kg)
Element Change Clearance:	8.50" (215 mm) for 1K; 17.50" (445 mm) for KK; 26.5" (673 mm) for 27K

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose), Z-Media® and ASP® Media (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation
Skydrol®	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)

KFH50 Hydrostatic Base-Ported 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

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_x(c) \geq 200$	$ß_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5
KZX3/KKZX3/27KZX3	<1.0	<1.0	<2.0	4.7	5.8
KZX10/KKZX10/27KZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KKZ1	224	27KZ1	336	KZW1	61		
KZ3	115	KKZ3	230	27KZ3	345	KZW3	64	KKZW3	128
KZ5	119	KKZ5	238	27KZ5	357	KZW5	63	KKZW5	126
KZ10	108	KKZ10	216	27KZ10	324	KZW10	57	KKZW10	114
KZ25	93	KKZ25	186	27KZ25	279	KZW25	79	KKZW25	158
KZX3	81*	KKZX3	163*	27KZX3	249*				
KZX10	90*	KKZX10	182*	27KZX10	279*				

* 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

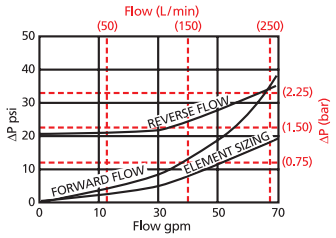
Flow Direction: Outside In

Element Nominal Dimensions:
K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

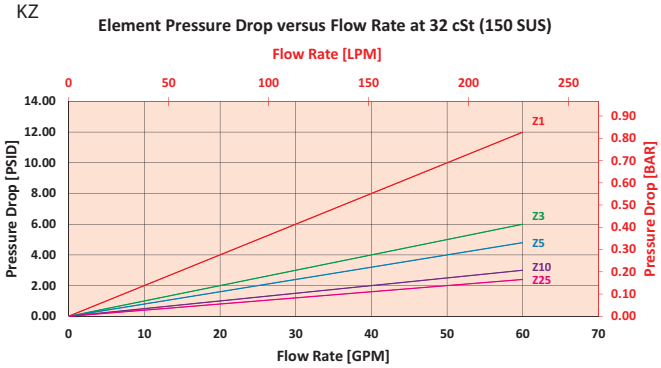
$\Delta P_{housing}$

KFH50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

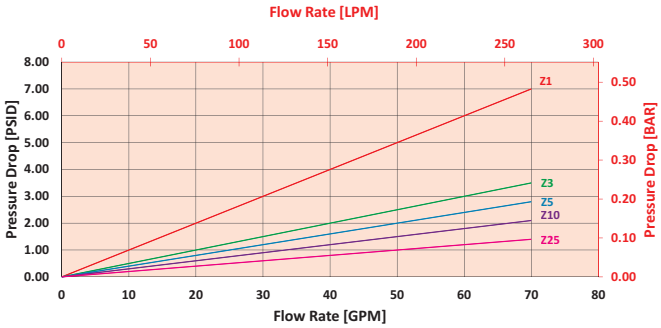


$\Delta P_{element}$

KZ



2KZ/KKZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 30 gpm (113.7 L/min) for KFH501KZ10SD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 30 gpm. In this case, $\Delta P_{housing}$ is 9 psi (.62 bar) on the graph for the KFH50 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 30 gpm. In this case, $\Delta P_{element}$ is 1.5 psi (.10 bar) according to the graph for the KZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 9 psi [.62 bar] | $\Delta P_{element}$ = 1.5 psi [.10 bar]

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

ΔP_{filter} = 9 psi + (1.5 psi * 1.1) = 10.7 psi

OR

ΔP_{filter} = .62 bar + (.10 bar * 1.1) = .73 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
K3	0.25	2K3/ KK3	0.12	3KZ1/ 27KZ1	0.05
K10	0.09	2K10/ KK10	0.05	3KZ3/ 27KZ3	0.03
K25	0.02	2K25/ KK25	0.01	3KZ5/ 27KZ5	0.02
KAS3	0.10	2KAS3/ KKAS3	0.05	3KZ10/ 27KZ10	0.02
KAS5	0.08	2KAS5/ KKAS5	0.04	3KZ25/ 27KZ25	0.01
KAS10	0.05	2KAS10/ KKAS10	0.03	3K3	0.08
KZX10	0.22	2KZX10/ KKZX10	0.11	3K10	0.03
KZW1	0.43	2KZW1	-	3K25	0.01
KZW3	0.32	2KZW3/ KKZW3	0.16	3KAS3/ 27KAS3	0.03
KZW5	0.28	2KZW5/ KKZW5	0.14	3KAS5/ 27KAS5	0.02
KZW10	0.23	2KZW10/ KKZW10	0.12	3KAS10/ 27KAS10	0.02
KZW25	0.14	2KZW25/ KKZW25	0.07	3KAS25/ 27KAS25	0.07

KFH50 Hydrostatic Base-Ported Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder KFH50:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
KFH50 –		–		–		–		–

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	
KFH50 –	1	– KZ5	–	– S	–	–	– D5	– G509	= KFH501KZ5SD5G509

BOX 1 – Filter Series

KFH50

BOX 2 – Number of Elements

1
2
3

BOX 3 – Element Part Number

K Length	KK Length	27K Length	
K3	KK3	27K3	= 3 µ E media (cellulose)
K10	KK10	27K10	= 10 µ E media (cellulose)
K25			= 25 µ E media (cellulose)
KZ1	KKZ1	27KZ1	= 1 µ Excellement® Z-Media® (synthetic)
KZ3	KKZ3	27KZ3	= 3 µ Excellement® Z-Media® (synthetic)
KZ5	KKZ5	27KZ5	= 5 µ Excellement® Z-Media® (synthetic)
KZ10	KKZ10	27KZ10	= 10 µ Excellement® Z-Media® (synthetic)
KZ25	KKZ25	27KZ25	= 25 µ Excellement® Z-Media® (synthetic)
KZW1			= 1 µ Aqua-Excellement™ ZW media
KZW3	KKZW3		= 3 µ Aqua-Excellement™ ZW media
KZW5	KKZW5		= 5 µ Aqua-Excellement™ ZW media
KZW10	KKZW10		= 10 µ Aqua-Excellement™ ZW media
KZW25	KKZW25		= 25 µ Aqua-Excellement™ ZW media
KW	KKW	27KW	= W media (water removal)
KM10			= K size 10 µ M media (reusable metal)
KM25			= K size 25 µ M media (reusable metal)
KM60			= K size 60 µ M media (reusable metal)
KM150			= K size 150 µ M media (reusable metal)
KM260			= K size 260 µ M media (reusable metal)

BOX 4 – Seal Material

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

BOX 5 – Porting

P	= 1½" NPTF
S	= SAE-24
F	= 1½" SAE 4-bolt flange Code 62
O	= Subplate
B	= ISO 228 G-1½"

BOX 6 – Bypass

Omit	= 40 PSI Bypass
50	= 50 PSI Bypass

BOX 7 – Test Points

Omit	= None
L	= Two ¼" NPTF inlet and outlet female test ports
U	= Series 1215 7/16 UNF Schroeder Check Test Point installation in cap (upstream)
UU	= Series 1215 7/16 UNF Schroeder Check Test Point installation in block (upstream and downstream)

BOX 8 – Dirt Alarm® Options

None	Omit =	None
Visual	D =	Pointer
	D5 =	Visual pop-up
	D5C =	D5 in cap
	D9 =	All stainless D5
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
	D8C =	D8 in cap
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
Electrical Visual	MS =	Cam operated switch w/ ½" conduit female connection
	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

BOX 9 – Additional Options

Omit	= None
G509	= Dirt alarm and drain opposite standard

NOTES:

Box 2. Number of elements must equal 1 when using KK or 27K elements.

Box 3. Replacement element part numbers are identical to contents of Boxes 3 and 4. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. ZW media not available in 27K length.

Box 4. H.5 seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior.
Viton® is a registered trademark of DuPont Dow Elastomers.
Skydrol® is a registered trademark of Solutia Inc.

Box 5. For option F, bolt depth .75" (19 mm). For option O, O-rings included; hardware not included.

In-Line Filter LC60

Features and Benefits (LC60)

- Compact design allows for in-line installation.
- Small profile allows filter to be mounted in tight areas.
- Quick and easy cartridge element change outs.
- Durable, compact design.
- Uses 10 micron stainless steel wire mesh filtration.
- Perfect for pilot pressure circuits and pressure compensated pump protection.

8 gpm
30 L/min
6000 psi
415 bar

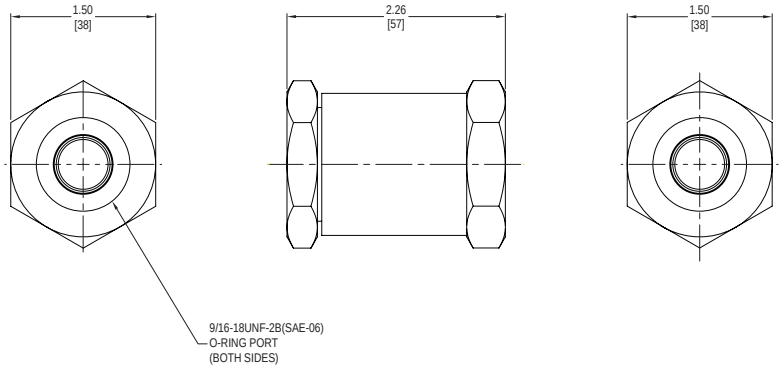
Model No. of filter in photograph is LC601SSD10S.

Filter Housing Specifications

Flow Rating:	Up to 8 gpm (30 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (414 bar)
Min. Yield Pressure:	18000 psi (1241 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	6000 psi (414 bar), per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Porting Head: Element Case:	Steel Steel
Weight:	0.93 lbs. (0.42 kg)
Element Change Clearance:	2.50" (63.5 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Stainless Steel Wire Mesh
Invert Emulsions	10 µ Stainless Steel Wire Mesh
Water Glycols	10 µ Stainless Steel Wire Mesh



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.

LC60 In-Line Filter

Element Performance Information & Dirt Holding Capacity

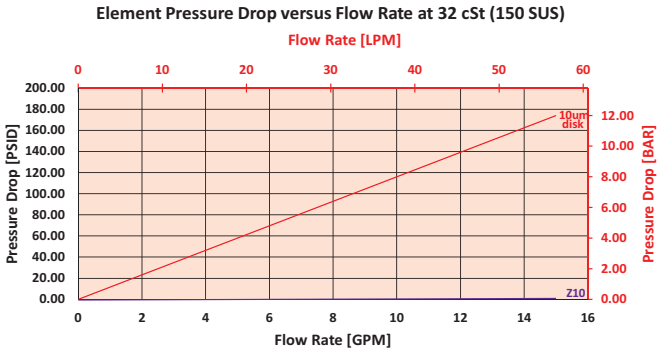
Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$

Please contact manufacture for more details

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

LC60 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder LC60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
LC60 –		–	–	–

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
LC60 –	1 –	SSD10 –		S	= LC601SSD10S

BOX 1

Filter Series
LC60

BOX 2

Number of Elements
1

BOX 3

Element Part Number
SSD10 = 10 µ Stainless Steel Wire Mesh

BOX 4

Seal Material
Omit = Buna N

BOX 5

Porting
S = SAE-6

In-Line Filter LC35

Features and Benefits (LC35)

- Compact design allows for in-line installation.
- Small profile allows filter to be mounted in tight areas.
- Quick and easy cartridge element change outs.
- Durable, compact design.
- Uses 10 or 40 micron Sintered Bronze filtration.
- Perfect for pilot pressure circuits and pressure compensated pump protection.

15 gpm
57 L/min
3500 psi
241 bar

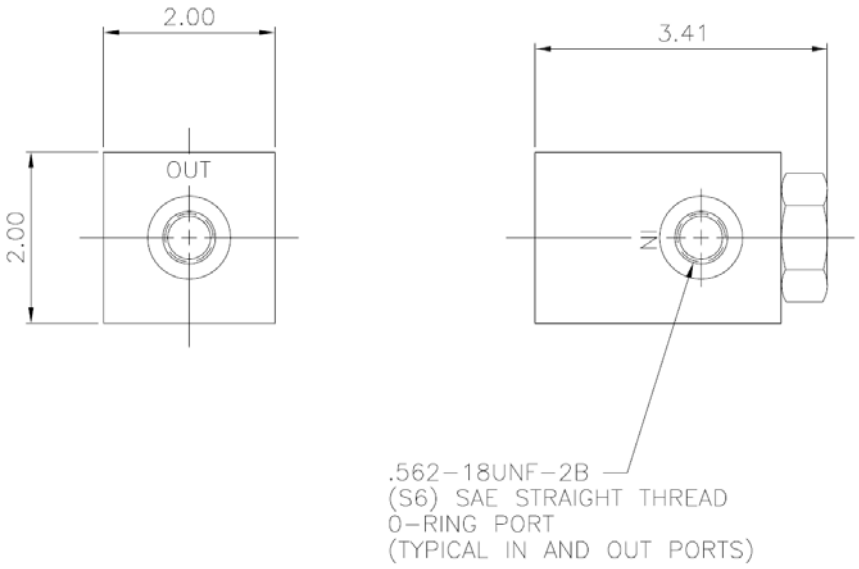
Model No. of filter in photograph is LC351BS10S.

Filter Housing Specifications

Flow Rating:	Up to 15 gpm (57 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3500 psi (241 bar)
Min. Yield Pressure:	10500 psi (724 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	2200 psi (152 bar), per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Porting Head:	Steel
Element Case:	Steel
Weight:	1.32 lbs. (0.60 kg)
Element Change Clearance:	3.25" (82.6 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Sintered Bronze
Invert Emulsions	10 and 40 µ Sintered Bronze
Water Glycols	10 and 40 µ Sintered Bronze



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.

LC35 In-Line Filter

Element Performance Information & Dirt Holding Capacity

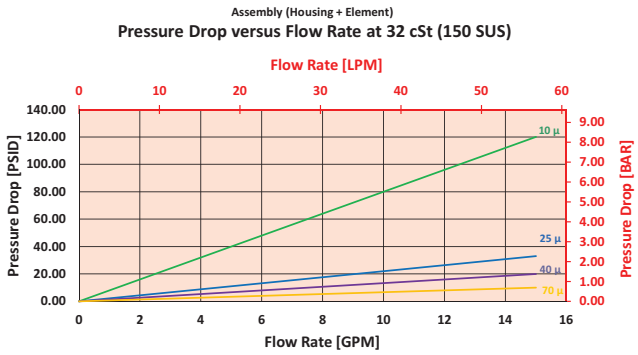
Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$

Please contact manufacturer for more details

Pressure Drop Information Based on Flow Rate and Viscosity

$\Delta P_{housing}$

LC35 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder LC35:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
LC35 –		–		–

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
LC35 –	1 –	BS10 –		S	= LC351BS10S

BOX 1

Filter Series
LC35

BOX 2

Number of Elements
1

BOX 3

Element Part Number
BS10 = 10 µ Sintered Bronze
BS25 = 25 µ Sintered Bronze
BS40 = 40 µ Sintered Bronze
BS70 = 70 µ Sintered Bronze

BOX 4

Seal Material
Omit = Buna N

BOX 5

Porting
S = SAE-6

In-Line Filter LI50

Features and Benefits

- In-line pressure filter
- Designed for high pressure last chance protection
- Available with indicator, which is unique for in-line filters of this kind.
- Cap handles provide for easy element changeout

35 gpm
130 L/min
5000 psi
345 bar

Model No. of filter in photograph is LI50IZ10SMS13DC.

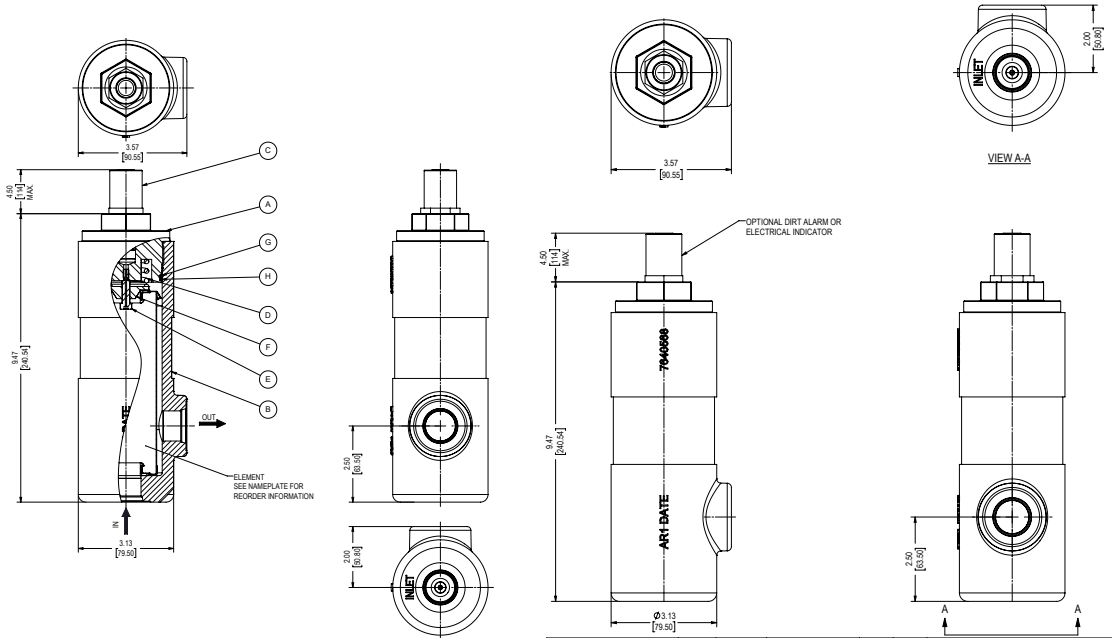
Filter Housing Specifications

Flow Rating:	35 gpm (130 L/min)
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	300 psi (21 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	Contact Factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 50 psi (3.4 bar) Full Flow: 55 psi (3.8 bar)
Housing: Cap:	Ductile Iron Steel
Weight:	10.0 lbs. (4.5 kg)
Element Change Clearance:	7.1 (178 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	Z-Media® and ASP® media (synthetic)
High Water Content	All Z-Media® and ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and all ASP® media (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation and all ASP® media (synthetic)

LI50 In-Line Filter



Metric dimensions in ( ).

Element Performance Information & Dirt Holding Capacity

Element	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	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
IZ1	<1.0	<1.0	<1.0	<4.0	4.2
IZ3	<1.0	<1.0	<2.0	<4.0	4.8
IZ5	2.5	3.0	4.0	4.8	6.3
IZ10	7.4	8.2	10.0	8.0	10.0
IZ25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)
IZ1	8.3
IZ3	7.1
IZ5	7.9
IZ10	7.0
IZ25	

Element Collapse Rating: 290 psid

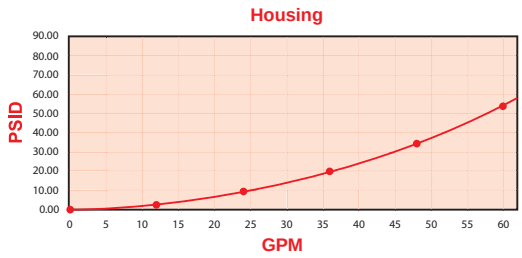
Flow Direction: Inside Out

Element Nominal Dimensions: 2.04″ OD x
(52mm OD x 155 mm long)
6.12″ long

Pressure Drop Information
Based on Flow Rate and Viscosity

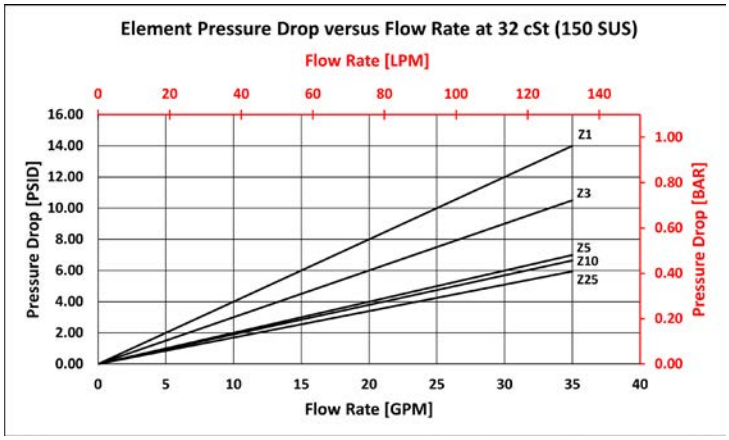
$\Delta P_{housing}$

IZ $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

IZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:
Determine ΔP_{filter} at 200 gpm (758 L/min) for LI50IZ10SMS13DC using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 35 gpm. In this case, $\Delta P_{housing}$ is 19 psi (1.31 bar) on the graph for the LI50 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 35 gpm. In this case, $\Delta P_{element}$ is 7 psi (.48 bar) according to the graph for the IZ10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:
$\Delta P_{housing}$ = 19 psi [1.31 bar] | $\Delta P_{element}$ = 7 psi [.48 bar]

V_f = 160 SUS (34 cSt) / 150 SUS (32 cSt) = 1.1
ΔP_{filter} = 2 psi + (7 psi * 1.1) = 9.7 psi
OR
ΔP_{filter} = 1.31 bar + (.48 bar * 1.1) = 1.84 bar

LI50 In-Line Filter

Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
LI50 –	–	–	–	

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
LI50 –	IZ10 –	–	S –	MS13DC	= LI50IZ10SMS13DC

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
Filter Series	Element Part Number	Seal Material	Porting	Indicator
LI50	IZ1 IZ3 IZ5 IZ10 IZ25	Omit = Buna	S = SAE12	MS13DC = MS13DC indicator

In-Line Filter LC50

Features and Benefits

- Compact design allows for in-line installation on hose reels
- High quality synthetic ZX-Media high collapse elements ensure all fluid is filtered
- Available with SAE or NPT threading
- Convenient 2 ¼" Hex for easy service

9 gpm
35 L/min
5000 psi
345 bar

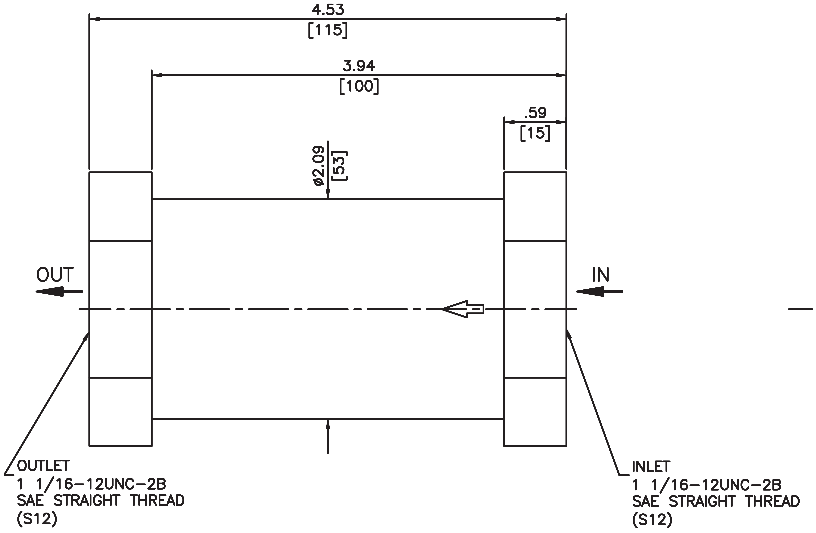
Model No. of filter in photograph is LC501LZX10S.

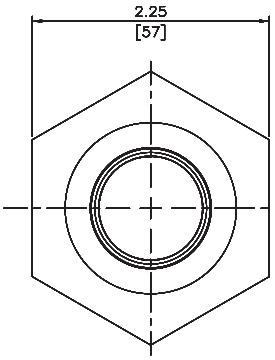
Filter Housing Specifications

Flow Rating:	Up to 9 gpm (35 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (350 bar)
Min. Yield Pressure:	15,000 psi (1050 bar)
Rated Fatigue Pressure:	5000 psi (350 bar), per NFPA T2.6.1-R1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Body and Cap:	Steel
Element Case:	Steel
Weight of LC50:	3.63 lbs. (1.65 kg)
Element Change Clearance:	3.25" (83 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	10 and 25 µ Z-Media® (synthetic)





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.

LC50 In-Line Filter

Element Performance Information & Dirt Holding Capacity

Element	Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171 $ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
LZX3	<4.0	4.8
LZX10	8.0	10.0
LZX25	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)
LZX3	1.1	LZX25	1.0
LZX10	1.0	LZX40	0.9

Element Collapse Rating: 3000 psi (207 bar)

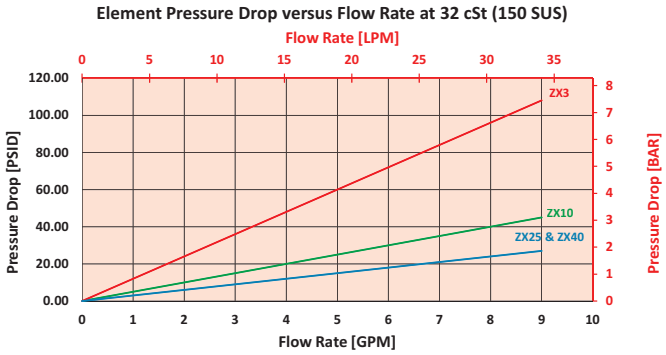
Flow Direction: Outside In

Element Nominal Dimensions: 1.4" (43 mm) O.D. x 1.7" (35 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

LC50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder LC50:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
LC50				

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
LC50	1	LZX10		S	= LC501LZX10S

BOX 1 — Filter Series
LC50 (non-bypassing only)

BOX 2 — Number of Elements
1

BOX 3 — Element Part Number
- LZX3 = 3 µ Excellement® Z-Media® (high collapse center tube)
- LZX10 = 10 µ Excellement® Z-Media® (high collapse center tube)
- LZX25 = 25 µ Excellement® Z-Media® (high collapse center tube)
- LZX40 = 40 µ Excellement® Z-Media® (high collapse center tube)

BOX 4 — Seal Material
- Omit = Buna N
- V = Viton®

BOX 5 — Porting
- S = SAE-12
- P = ¾" NPT

High-Pressure Sandwich Filter NOF30-05

Model No. of filter in photograph is NOF301NNZX305D5.

Features and Benefits

- Sandwich filter configured for D05 subplate
- Withstands high pressure surges, high static pressure loads
- 3000 psi collapse elements

12 gpm
45 L/min
3000 psi
210 bar

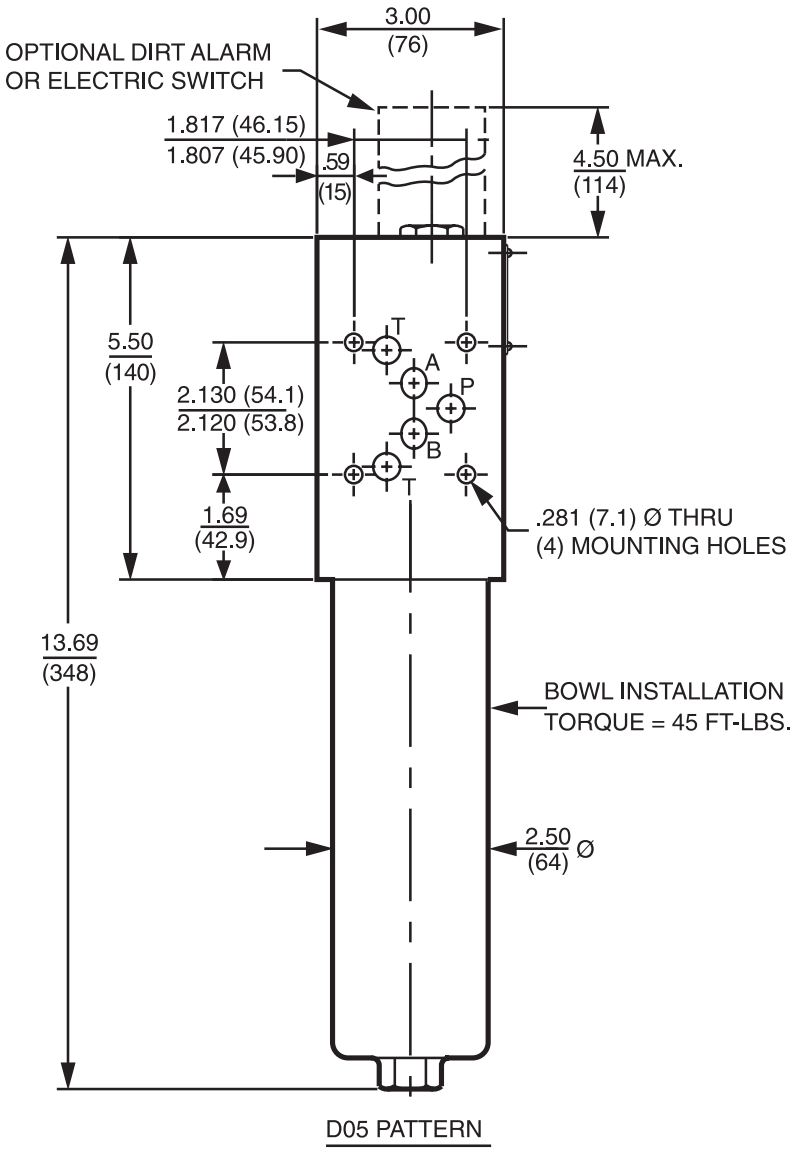
Filter Housing Specifications

Flow Rating:	Up to 12 gpm (45 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (210 bar)
Min. Yield Pressure:	10,000 psi (690 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	Contact Factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	High collapse elements are standard
Porting Base & Cap:	Aluminum
Element Case:	Aluminum
Weight of NOF30-1NN:	6.6 lbs. (3.0 kg)
Element Change Clearance:	4.50" (115 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	3, 10 and 25 µ Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 10 and 25 µ Z-Media® (synthetic)

NOF30-05 High-Pressure Sandwich 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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
NNZX3	<1.0	<1.0	<2.0	4.7	5.8
NNZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)
NNZX3	11*
NNZX10	13*

*Based on 100 psi terminal pressure

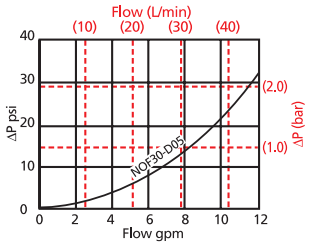
Element Collapse Rating: 3000 psid (210 bar) for high collapse (ZX) versions

Flow Direction: Outside In

Element Nominal Dimensions: 1.75" (45 mm) O.D. x 8.00" (200 mm) long

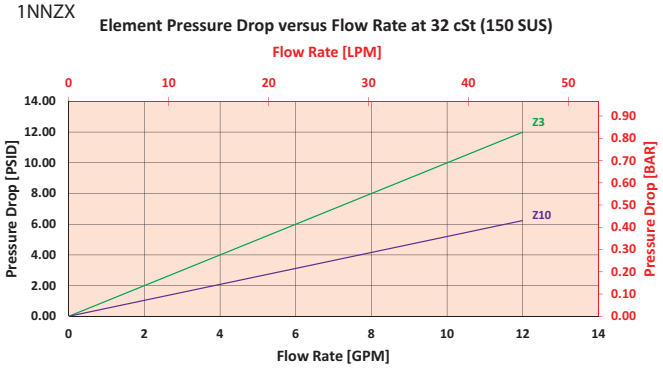
$\Delta P_{housing}$

NOF30-05 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

1NNZX



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 5 gpm (19 L/min) for NOF301NNZX1005D5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 5 gpm. In this case, $\Delta P_{housing}$ is 5 psi (.34 bar) on the graph for the NOF30 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 5 gpm. In this case, $\Delta P_{element}$ is 3 psi (.21 bar) according to the graph for the NNZX10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 5 psi [.34 bar] | $\Delta P_{element}$ = 3 psi [.21 bar]

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

ΔP_{filter} = 5 psi + (3 psi * 1.1) = 8.3 psi

OR

ΔP_{filter} = .34 bar + (.21 bar * 1.1) = .57 bar

NOF30-05 High-Pressure Sandwich Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder NOF30-05:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7
NOF30 –		–		–		–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
NOF30 –	1 –	NNZX3 –		05 –		D5	= NOF301NNZX305D5

BOX 1 – Filter Series

NOF30

BOX 2 – Number & Size of Elements

1

BOX 3 – Element Part Number

NNZX3	= NN size 3 µ high collapse media
NNZX10	= NN size 10 µ high collapse media
NNZX25	= NN size 25 µ high collapse media

BOX 4 – Seal Material

Omit	= Buna N
V	= Viton®
W	= Buna N

BOX 5 – Porting

05	= D05 subplate pattern

BOX 6 – Options

Omit = None

BOX 7 – Dirt Alarm® Options

None	Omit =	None
Visual	D5 =	Visual pop-up
Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5LC =	Low current MS5
	MS10 =	Electrical w/ DIN connector (male end only)
	MS10LC =	Low current MS10
	MS11 =	Electrical w/ 12 ft. 4-conductor wire
	MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12LC =	Low current MS12
	MS16 =	Electrical w/ weather-packed sealed connector
	MS16LC =	Low current MS16
	MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
	MS5LCT =	Low current MS5T
	MS10T =	MS10 (see above) w/ thermal lockout
	MS10LCT =	Low current MS10T
	MS12T =	MS12 (see above) w/ thermal lockout
	MS12LCT =	Low current MS12T
	MS16T =	MS16 (see above) w/ thermal lockout
	MS16LCT =	Low current MS16T
	MS17LCT =	Low current MS17T
	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13DCLCT =	Low current MS13DCT
	MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14DCLCT =	Low current MS14DCT

NOTES:

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

Box 4. For options V and W, all aluminum parts are anodized. Viton® is a registered trademark of DuPont Dow Elastomers.

High-Pressure Servo Sandwich Filter NOF50

Model No. of filter in photograph is NOF501SVZX3760.

Features and Benefits

- Localized protection at the servo helps to eliminate downtime and protect critical applications from contamination-related servo valve failures
- Sandwich style 4-bolt design – no additional lines to connect
- Designed to protect these commonly installed servo valves: Moog 761 & 62, Vickers SM4-20 and Parker BD15
- High collapse elements, rated to 3000 psi (210 bar)
- Easily applied to new and existing systems
- All steel construction

15 gpm
57 L/min
5000 psi
345 bar

Filter Housing Specifications

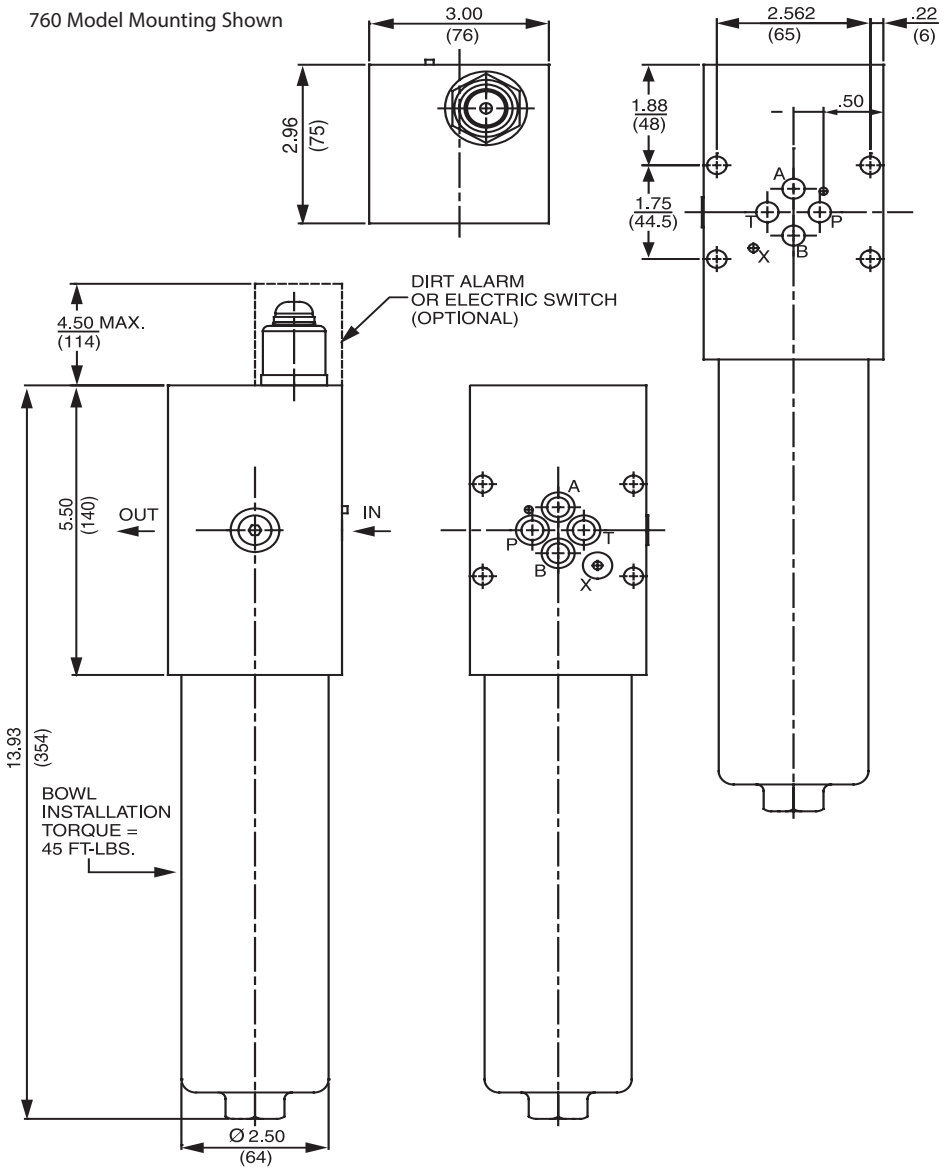
Flow Rating:	Up to 15 gpm (57 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	15,000 psi (1034 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	4000 psi (276 bar) per NFPA T2-6.1 R2-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Non-Bypass Model:	Standard with high collapse elements
Porting Head: Element Case:	Steel Steel
Weight of NOF50-1SV:	17 lb. (7.7 kg)
Element Change Clearance:	4.50" (115 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	3, 10 and 25 µ Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 10 and 25 µ Z-Media® (synthetic)

NOF50 High-Pressure Servo Sandwich Filter

760 Model Mounting Shown



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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
SVZX3	<1.0	<1.0	<2.0	4.7	5.8
SVZX10	7.4	8.2	10.0	8.0	9.7

Element	DHC (gm)
SVZX3	11*
SVZX10	13*

*Based on 100 psi terminal pressure

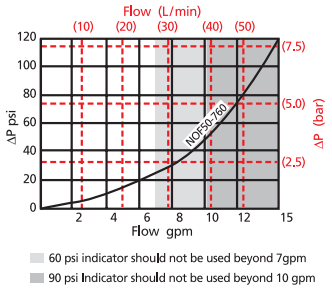
Element Collapse Rating: 3000 psid (210 bar) for high collapse (ZX) versions

Flow Direction: Outside In

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

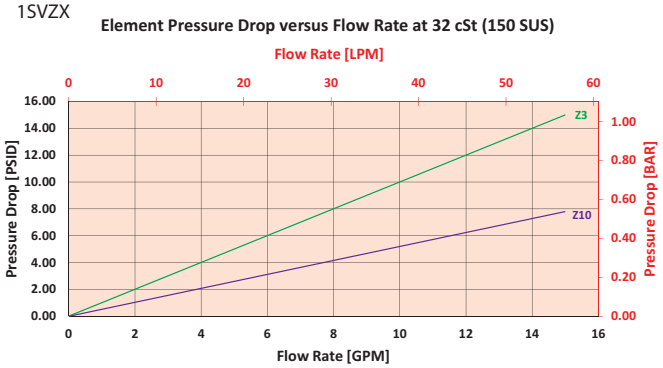
$\Delta P_{housing}$

NOF50 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

1SVZX



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 5 gpm (19 L/min) for NOF501SVZX10760D5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 5 gpm. In this case, $\Delta P_{housing}$ is 15 psi (1 bar) on the graph for the NOF30 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 5 gpm. In this case, $\Delta P_{element}$ is 3 psi (.21 bar) according to the graph for the SVZX10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 15 psi [1 bar] | $\Delta P_{element}$ = 3 psi [.21 bar]

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

ΔP_{filter} = 15 psi + (3 psi * 1.1) = 18.3 psi

OR

ΔP_{filter} = 1 bar + (.21 bar * 1.1) = 1.2 bar

NOF50 High-Pressure Servo Sandwich Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder NOF50:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
NOF50 –	–	–	–	–	–	–	–

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	
NOF50 –	1 –	SVZX3 –	–	760 –	–	–	D5	= NOF501SVZX3760D5

BOX 1 – Filter Series

NOF50

BOX 2 – Number of Elements

1

BOX 3 – Element Part Number

SVZX3 = S size 3 µ high collapse media
SVZX10 = S size 10 µ high collapse media
SVZX25 = S size 25 µ high collapse media

BOX 4 – Seal Material

Omit = Buna N
V = Viton®

BOX 5 – Porting

760 = Moog servo configuration
761 = Moog servo configuration

BOX 6 – Options

Omit = 60 psid
90 = 90 psid

BOX 7 – Optional Test Point

Omit = None
U = Series 1215 7/16"-20 UNF Schroeder Check Test Point installation

BOX 8 – Dirt Alarm® Options

None	Omit = None
Visual	D5 = Visual pop-up
Visual with Thermal Lockout	D8 = Visual w/ thermal lockout
Electrical	MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable MS5LC = Low current MS MS10 = Electrical w/ DIN connector (male end only) MS10LC = Low current MS10 MS11 = Electrical w/ 12 ft. 4-conductor wire MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only) MS12LC = Low current MS12 MS16 = Electrical w/ weather-packed sealed connector MS16LC = Low current MS16 MS17LC = Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T = MS5 (see above) w/ thermal lockout MS5LCT = Low current MS5T MS10T = MS10 (see above) w/ thermal lockout MS10LCT = Low current MS10T MS12T = MS12 (see above) w/ thermal lockout MS12LCT = Low current MS12T MS16T = MS16 (see above) w/ thermal lockout MS16LCT = Low current MS16T MS17LCT = Low current MS17T
Electrical Visual	MS13 = Supplied w/ threaded connector & light MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT = MS13 (see above), direct current, w/ thermal lockout MS13DCLCT = Low current MS13DCT MS14DCT = MS14 (see above), direct current, w/ thermal lockout MS14DCLCT = Low current MS14DCT

NOTES:

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

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 6. Please note indicator flow limitations on pressure drop graph, previous page.

High-Pressure Sandwich Filter FOF60-03

Model No. of filter in photograph is FOF601FZX303BD5.

Features and Benefits

- Sandwich filter configured for D03 subplate pattern
- Withstands high pressure surges, high static pressure loads
- 3000 psi collapse elements

12 gpm
45 L/min
6000 psi
415 bar

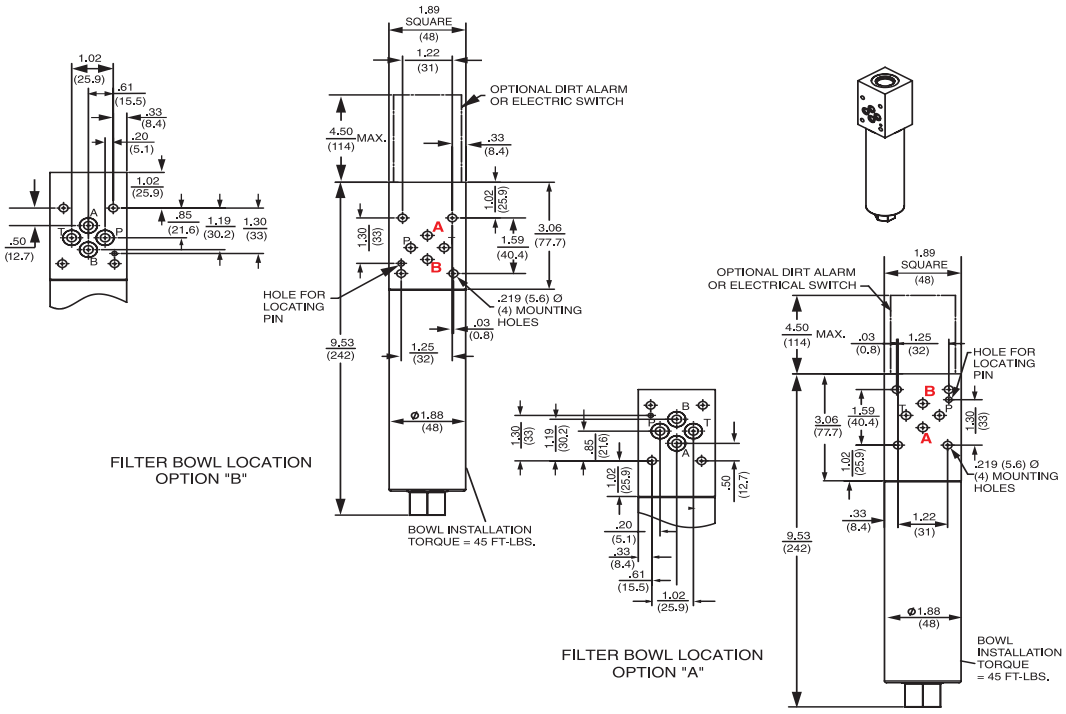
Filter Housing Specifications

Flow Rating:	Up to 12 gpm (45 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	26,000 psi (1790 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	4000 psi (275 bar), per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Non-Bypass Model:	Available with high collapse elements
Porting Head: Element Case:	Steel Steel
Weight:	7.3 lbs. (3.3 kg)
Element Change Clearance:	4.50" (115 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	3 and 10 µ Z-Media® (synthetic)

FOF60-03 High-Pressure Sandwich 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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
FZX3	<1.0	<1.0	<2.0	4.7	5.8
FZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)
FZX3	3*
FZX10	5.1

Element Collapse Rating: 3000 psid (210 bar) for high collapse (ZX) versions

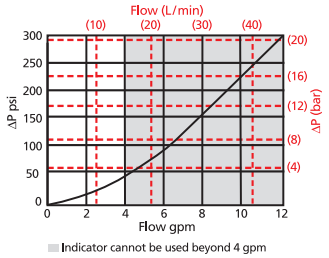
Flow Direction: Outside In

Element Nominal Dimensions: 1.25" (30 mm) O.D. x 3.25" (85 mm) long

*Based on 100 psi terminal pressure

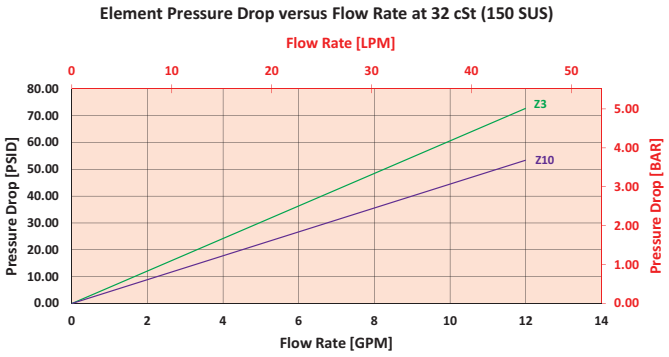
$\Delta P_{housing}$

FOF60-03 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

FXZ



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 5 gpm (19 L/min) for FOF601FZX1003BD5 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 5 gpm. In this case, $\Delta P_{housing}$ is 60 psi (4.1 bar) on the graph for the FOF60 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 5 gpm. In this case, $\Delta P_{element}$ is 22 psi (1.5 bar) according to the graph for the FZX10 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). 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:

$\Delta P_{housing}$ = 60 psi [4.1 bar] | $\Delta P_{element}$ = 22 psi [1.5 bar]

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

ΔP_{filter} = 60 psi + (22 psi * 1.1) = 64.2 psi

OR

ΔP_{filter} = 4.1 bar + (1.5 bar * 1.1) = 5.8 bar

FOF60-03 High-Pressure Sandwich Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder FOF60-03:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7
FOF60 –		–		–		–

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
FOF60 –	1 –	FZX3 –		03 –	A –	D5	= FOF601FZX303AD5

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
Filter Series	Number of Elements	Element Part Number	Seal Material	Porting
FOF60	1	FZX3 = F size 3 µ high collapse media FZX10 = F size 10 µ high collapse media	Omit = Buna N V = Viton®	03 = D03 subplate pattern

BOX 6	BOX 7		
Filter Bowl Location	Dirt Alarm® Options		
A = Bowl adjacent to Port "A" B = Bowl adjacent to Port "B" (Refer to drawing on page 140.)	None	Omit =	None
	Visual	D5 =	Visual pop-up
	Visual with Thermal Lockout	D8 =	Visual w/ thermal lockout
	Electrical	MS5 =	Electrical w/ 12 in. 18 gauge 4-conductor cable
		MS5LC =	Low current MS
		MS10 =	Electrical w/ DIN connector (male end only)
		MS10LC =	Low current MS10
		MS11 =	Electrical w/ 12 ft. 4-conductor wire
		MS12 =	Electrical w/ 5 pin Brad Harrison connector (male end only)
		MS12LC =	Low current MS12
		MS16 =	Electrical w/ weather-packed sealed connector
		MS16LC =	Low current MS16
		MS17LC =	Electrical w/ 4 pin Brad Harrison male connector
	Electrical with Thermal Lockout	MS5T =	MS5 (see above) w/ thermal lockout
		MS5LCT =	Low current MS5T
		MS10T =	MS10 (see above) w/ thermal lockout
		MS10LCT =	Low current MS10T
		MS12T =	MS12 (see above) w/ thermal lockout
		MS12LCT =	Low current MS12T
		MS16T =	MS16 (see above) w/ thermal lockout
		MS16LCT =	Low current MS16T
		MS17LCT =	Low current MS17T
	Electrical Visual	MS13 =	Supplied w/ threaded connector & light
		MS14 =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
	Electrical Visual with Thermal Lockout	MS13DCT =	MS13 (see above), direct current, w/ thermal lockout
		MS13DCLCT =	Low current MS13DCT
		MS14DCT =	MS14 (see above), direct current, w/ thermal lockout
		MS14DCLCT =	Low current MS14DCT

NOTES:

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

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 7. Dirt Alarm® cannot be used beyond 4 gpm. Filters ordered without a Dirt Alarm do not include a machined indicator port. Therefore, one cannot be added at a later date.

Manifold Filter Kit NMF30

Model No. of filter in photograph is NMF301NNZX10.

Features and Benefits

- Allows for effective filtration in customer's manifold

20 gpm
75 L/min
3000 psi
210 bar

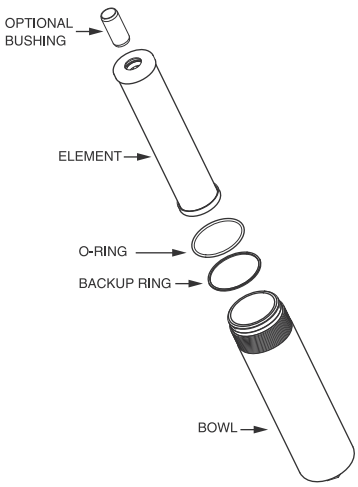
Filter Housing Specifications

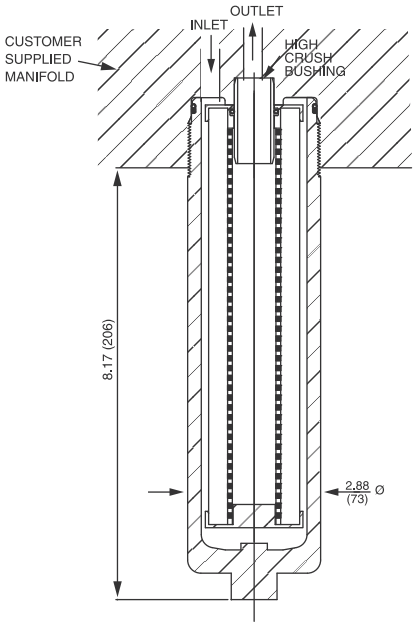
Flow Rating:	Up to 20 gpm (75 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (210 bar)*
Min. Yield Pressure:	10,000 psi (690 bar)*, per NFPA T2.6.1
Rated Fatigue Pressure:	2400 psi (185 bar)*, per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Element Case:	Aluminum
Element Change Clearance:	4.50" (115 mm)

*Only with manifold material properties equivalent to aluminum 6061-T651.

Fluid Compatibility

Type Fluid
Petroleum Based Fluids
High Water Content





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.

NMF30 Manifold Filter Kit

Element Performance Information & Dirt Holding Capacity

Element	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		Dirt Holding Capacity gm
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$	
NNZX3	<1.0	<1.0	<2.0	4.7	5.8	11*
NNZX10	7.4	8.2	10.0	8.0	9.8	13*

Element	DHC (gm)
NNZX3	11*
NNZX10	13*

Element Collapse Rating: 3000 psid (210 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 1.75" (45 mm) O.D. x 8.00" (200 mm) long

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder NMF30:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
NMF30 –		–	–	–

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
NMF30 –	1 –	NNZX3 –			= NMF301NNZX3

BOX 1 – Filter Series

NMF30

BOX 2 – Number of Elements

1

BOX 3 – Element Part Number

NNZX3	= NN size 3 µ high collapse media
NNZX10	= NN size 10 µ high collapse media
NNZX25	= NN size 25 µ high collapse media

BOX 4 – Seal Material

Omit	= Buna N
V	= Viton®
W	= Buna N

BOX 5 – Bushing

Omit	= Included
N	= Not included

NOTES:

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

Box 4. For options V and W, all aluminum parts are anodized. Viton® is a registered trademark of DuPont Dow Elastomers.

Manifold Filter Kit RMF60

Model No. of filter in photograph is RMF608RZX10.

Features and Benefits

- Allows for effective filtration in customer's manifold

30 gpm
115 L/min
6000 psi
415 bar

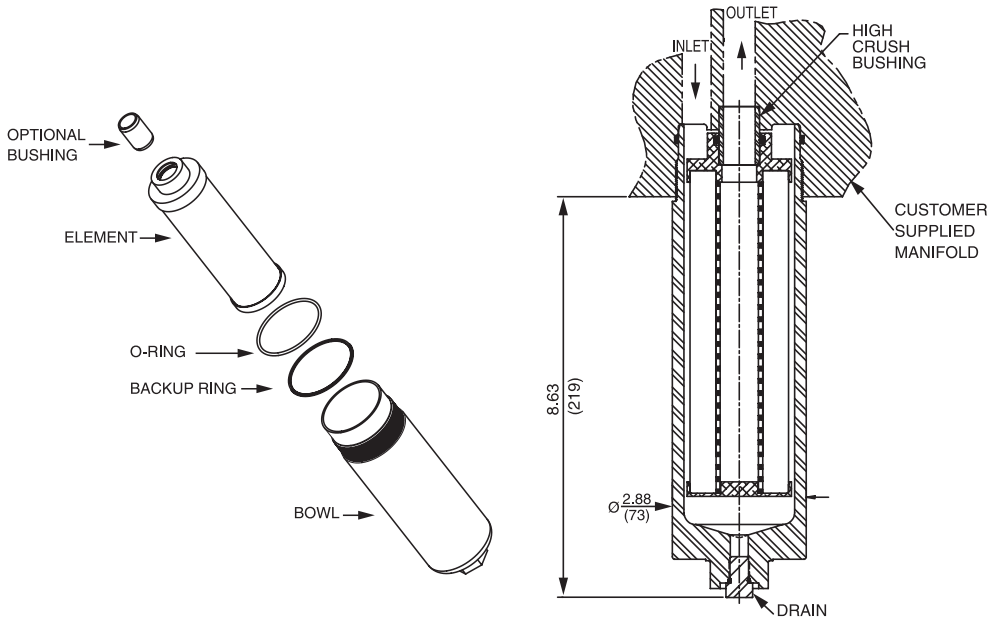
Filter Housing Specifications

Flow Rating:	Up to 30 gpm (115 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)*
Min. Yield Pressure:	18,000 psi (1240 bar)*
Rated Fatigue Pressure:	2300 psi (159 bar)*
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Element Case:	Steel
Element Change Clearance:	3.0" (75 mm)

*Only with manifold material properties equivalent to AISI 1018 C.R.S.

Fluid Compatibility

Type Fluid
Petroleum Based Fluids
High Water Content



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 of drawing 7638211

RMF60 Manifold Filter Kit

Element Performance Information & Dirt Holding Capacity

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
NNZX3	<1.0	<1.0	<2.0	4.7	5.8
NNZX10	7.4	8.2	10.0	8.0	9.8

Element	DHC (gm)

Element Collapse Rating: 3000 psid (210 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 2.18" (55mm) O.D. x 8.15" (206 mm) long

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder RMF60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
RMF60 –		–	–	–

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
RMF60 –	8 –	RZX3 –	–		= RMF608RZX3

BOX 1 – Filter Series

RMF60

BOX 2 – Element Length

8

BOX 3 – Element Size and Media

RZX3 = E size 3 µ Excellement® Z-Media® (high collapse center tube)

RZX10 = E size 10 µ Excellement® Z-Media® (high collapse center tube)

RZX25 = E size 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 4 – Seal Material

Omit = Buna N

V = Viton®

H = EPR

BOX 5 – Bushing

Omit = Included

N = Not included

NOTES:

Box 2: Replacement element part numbers are a combination of Boxes 2, 3, and 4. Example: 8RZX3V

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.

Features and Benefits (14-CRZX10)

- Cartridge filters are designed to be mounted directly in the manifold
- Withstands high pressure surges–3000 psi (210 bar) collapse rating

6 gpm
23 L/min
3000 psi
210 bar

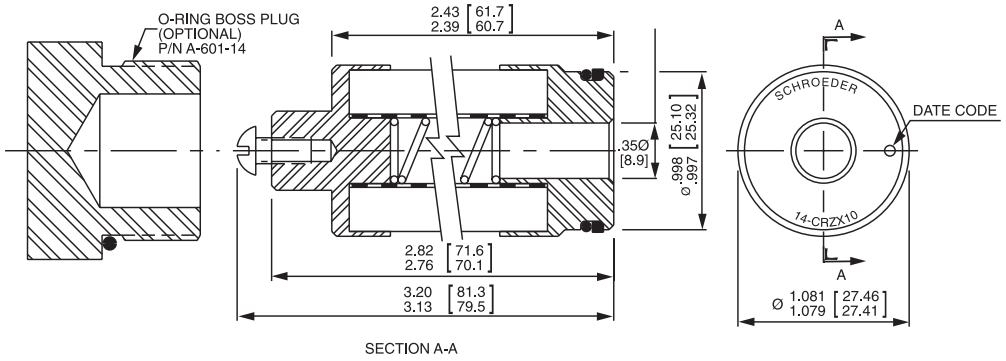
Filter Housing Specifications

Max. Operating Pressure:	3000 psi (210 bar)
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Element Change Clearance:	14-CRZX10: 4.50" (115 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	3 and 10 µ Z-Media® (synthetic)

Element Performance Information & Dirt Holding Capacity



SECTION A-A

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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
ZX10	7.4	8.2	10.0	8.0	9.8

Contact factory for other media options.

Element	DHC (gm)

Element Collapse Rating:	3000 psid (210 bar) for high collapse (ZX) versions
Flow Direction:	Outside In
Element Nominal Dimensions:	

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder 14-CRZX10:

BOX 1		BOX 2
14-CRZX10	–	

Example: NOTE: One option per box

BOX 1		BOX 2	
14-CRZX10	–	P	= 14-CRZX10P

BOX 1	BOX 2
Filter Series	Number of Elements
14-CRZX10	Omit = No Plug P = Plug

NOTES:

Box 2: Replacement element part numbers are a combination of Boxes 2, 3, and 4. Example: 8RZX3V

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.

20-CRZX10 Cartridge Element

12 gpm
45 L/min
3000 psi
210 bar

Features and Benefits (20-CRZX10)

- Cartridge filters are designed to be mounted directly in the manifold
- Withstands high pressure surges–3000 psi (210 bar) collapse rating

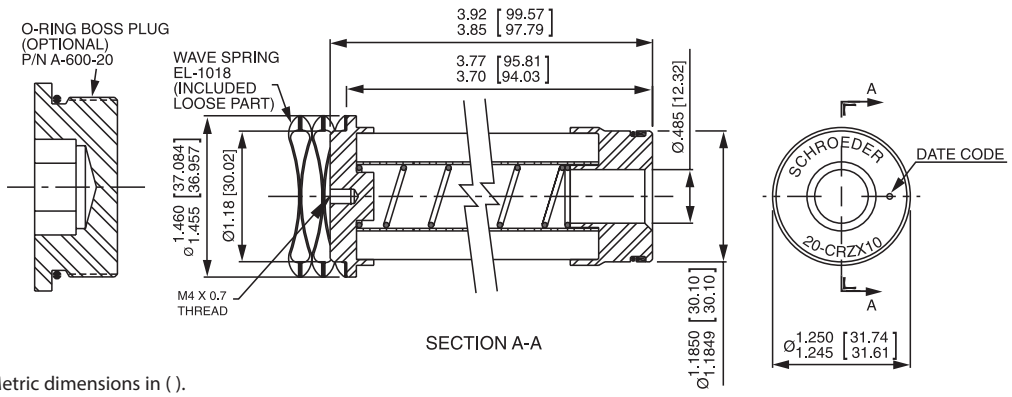
Filter Housing Specifications

Max. Operating Pressure:	3000 psi (210 bar)
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Element Change Clearance:	20-CRZX10: 3.50" (90 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	3 and 10 µ Z-Media® (synthetic)

Element Performance Information & Dirt Holding Capacity



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

	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	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
ZX10	7.4	8.2	10.0	8.0	9.8

Contact factory for other media options.

Element	DHC (gm)

Element Collapse Rating:	3000 psid (210 bar) for high collapse (ZX) versions
Flow Direction:	Outside In
Element Nominal Dimensions:	

*Based on 100 psi terminal pressure

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder 20-CRZX10:

BOX 1		BOX 2
20-CRZX10	–	

Example: NOTE: One option per box

BOX 1		BOX 2	
20-CRZX10	–	P	= 20-CRZX10P

BOX 1	BOX 2
Filter Series	Number of Elements
20-CRZX10	Omit = No Plug P = Plug

NOTES:

Box 2: Replacement element part numbers are a combination of Boxes 2, 3, and 4. Example: 8RZX3V

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.