

Manifold Mounted Pressure Filter

NFS30



Features and Benefits

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

Model No. of filter in photograph is NFS301NZ3OD5.



INDUSTRIAL



AUTOMOTIVE
MANUFACTURING



MACHINE
TOOL



STEEL
MAKING



PULP & PAPER



AGRICULTURE



MOBILE
VEHICLES

20 gpm
75 L/min
3000 psi
210 bar

NF30

NFS30

YF30

CFX30

PLD

DF40

CF40

PF40

RFS50

RF60

CF60

CTF60

VF60

LW60

KF30

TF50

KF50

KC50

MKF50

KC65

NOF30-05

NOF50-760

FOF60-03

NMF30

RMF60

Cartridge
Elements

HS60

MHS60

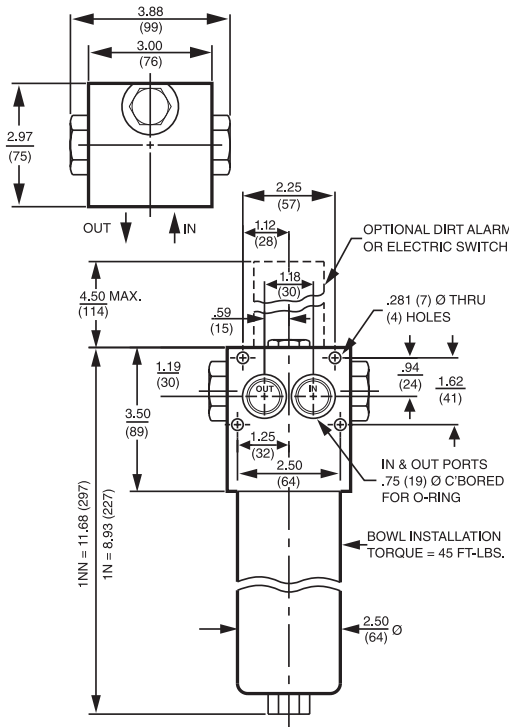
KFH50

Applications

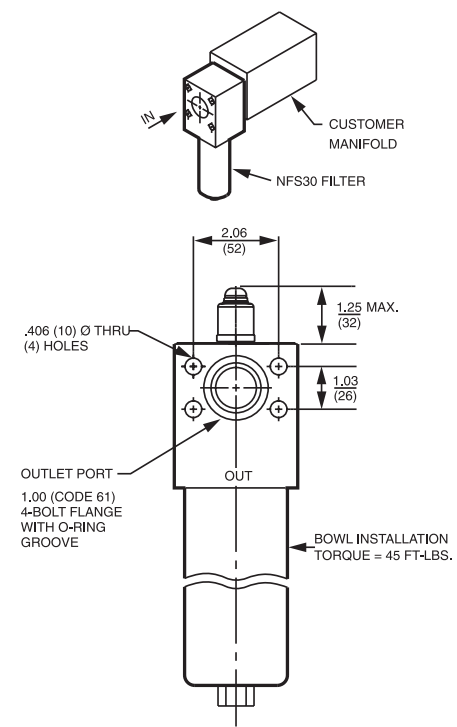
Filter Housing Specifications

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:	Aluminum
Element Case:	Aluminum
Weight of NFS30-1N:	3.6 lbs. (1.6 kg)
Weight of NFS30-1NN:	4.3 lbs. (2.0 kg)
Element Change Clearance:	4.50" (115 mm)

NFS30 WITH "O" PORT CONFIGURATION



NFS30 WITH PO, SO, FO PORT CONFIGURATION



Metric dimensions in ().

Element Performance Information

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio wrt ISO 16889 Using APC calibrated per ISO 11171	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
N3/NN3	6.8	7.5	10.0	N/A	N/A
N10/NN10	15.5	16.2	18.0	N/A	N/A
NZ1/NNZ1	<1.0	<1.0	<1.0	<4.0	4.2
NZ3/NAS3/NNZ3/NNAS3	<1.0	<1.0	<2.0	<4.0	4.8
NZ5/NAS5/NNZ5/NNAS5	2.5	3.0	4.0	4.8	6.3
NZ10/NAS10/NNZ10/NNAS10	7.4	8.2	10.0	8.0	10.0
NZ25/NNZ25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)
N3	8	NN3	12
N10	7	NN10	10
NZ1	12	NNZ1	15
NZ3/NAS3	12	NNZ3/NNAS3	16
NZ5/NAS5	12	NNZ5/NNAS5	18
NZ10/NAS10	11	NNZ10/NNAS10	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: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

Manifold Mounted Pressure Filter

NFS30

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), 3, 5, and 10 µ ASP Media (synthetic)

Fluid Compatibility

NF30
NFS30
 YF30
 CFX30

Pressure	Series	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve.		
		Part No.				
To 3000 psi (210 bar)	E Media	N3 & NN3	1N3	1NN3	See DF40	
		N10 & NN10	1N10		1NN10	
		N25 & NN25	1N25 & 1NN25			
	Z- Media®	NZ1 & NNZ1	1NZ1	1NNZ1	See DF40	
		NZ3 & NNZ3	1NZ3		1NNZ3	
		NZ5 & NNZ5	1NZ5			1NNZ5
		NZ10 & NNZ10	1NZ10 & 1NNZ10			
		NZ25 & NNZ25				1NZ25 & 1NNZ25
Flow	gpm	0	5	10	15	20
	(L/min)	0	25	50	75	

Element Selection Based on Flow Rate

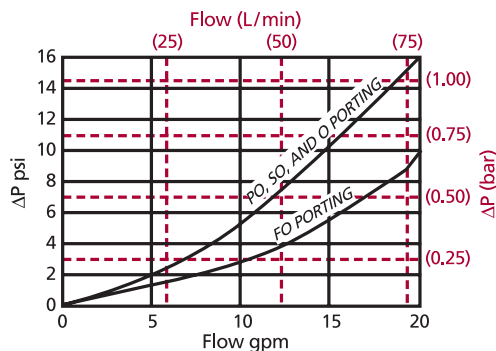
PLD
 DF40
 CF40
 PF40
 RFS50
 RF60
 CF60
 CTF60
 VF60

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

Note: Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications. For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.

ΔP_{housing}

NFS30 ΔP_{housing} for fluids with sp gr = 0.86:



ΔP_{element}

ΔP_{element} = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

	1N	1NN
N3	1.10	.77
N10	.17	.13
N25	.10	.07
NZ1	1.43	1.23
NZ3/NAS3	.92	.56
NZ5/NAS5	.71	.46
NZ10/NAS10	.57	.35
NZ25	.36	.20

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).

Pressure Drop Information Based on Flow Rate and Viscosity

LW60
 KF30
 TF50
 KF50
 KC50
 MKF50
 KC65
 NOF30-05
 NOF50-760
 FOF60-03
 NMF30
 RMF60
 Cartridge Elements
 HS60
 MHS60
 KFH50

sp gr = specific gravity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Notes

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

Exercise:

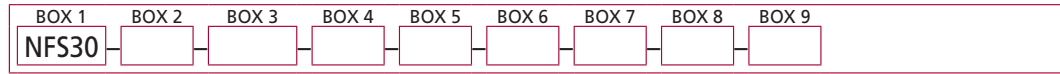
Determine ΔP at 10 gpm (38 L/min) for NFS301NNZ10FOD using 200 SUS (44 cSt) fluid.

Solution:

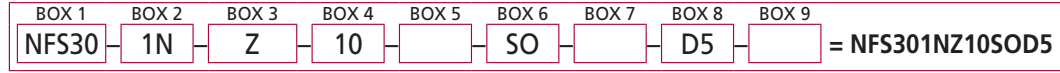
$$\begin{aligned} \Delta P_{\text{housing}} &= 3.0 \text{ psi } [.25 \text{ bar}] \\ \Delta P_{\text{element}} &= 10 \times .35 \times (200 \div 150) = 4.7 \text{ psi} \\ &\text{or} \\ &= [38 \times (.35 \div 54.9) \times (44 \div 32) = .33 \text{ bar}] \\ \Delta P_{\text{total}} &= 3.0 + 4.7 = 7.7 \text{ psi} \\ &\text{or} \\ &= [.25 + .33 = .58 \text{ bar}] \end{aligned}$$

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder NFS30



Example: NOTE: One option per box



Filter Series	Number & Size of Elements	Media Type
NFS30	1 N NN	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
NFSN30		

(Non-bypassing: requires ZX high collapse elements)

BOX 4	BOX 5	BOX 6	BOX 7
Micron Rating 1 = 1 Micron (Z, ZW, ZX media) 3 = 3 Micron (AS, E, Z, ZW, ZX media) 5 = 5 Micron (AS, Z, ZW, ZX media) 10 = 10 Micron (AS, E, M, Z, ZW, ZX media) 25 = 25 Micron (E, Z, ZW, ZX media) only N 60 = 60 Micron (M media)	Seal Material Omit = Buna N V = Viton® W = Buna N	Porting SO = SAE-12 PO = ¾" NPTF FO = 1" SAE 4-bolt flange Code 61 O = Manifold	Options Omit = None X = Blocked bypass (N/A with NFSN30)

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 MS13DLCT = Low current MS13DCT MS14DCT = MS14 (see above), direct current, w/ thermal lockout MS14DLCT = 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. Viton® is a registered trademark of DuPont Dow Elastomers.

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

Box 8. For options SO, PO, and FO, available dirt alarms are D and MS2 only.