

# High-Pressure Sandwich Filter

# NOF30-05



## 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**

Model No. of filter in photograph is NOF301NNZX305D5.



**AUTOMOTIVE  
MANUFACTURING**



**MINING  
TECHNOLOGY**



**MACHINE  
TOOL**



**PULP & PAPER**



**MOBILE  
VEHICLES**

## Applications

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

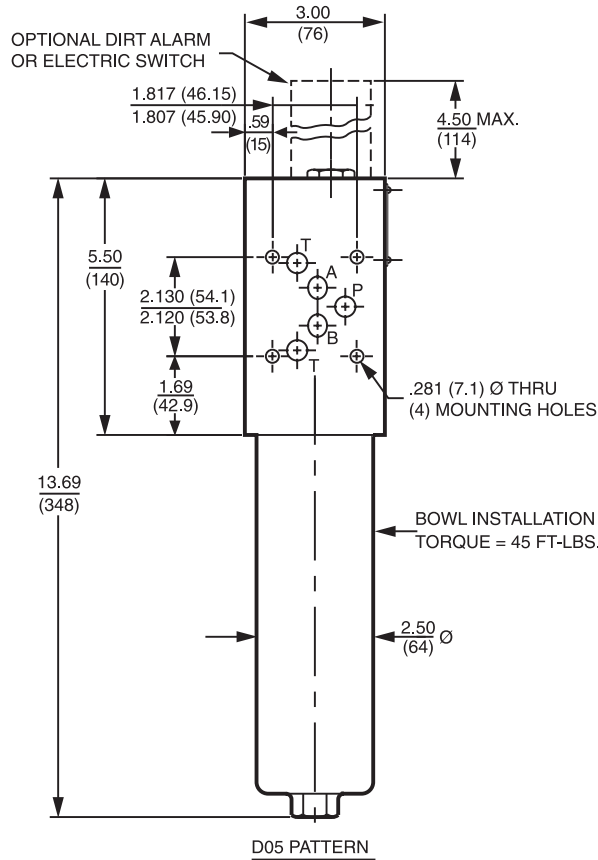
HS60

MHS60

KFH50

## 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)                     |
| Non-Bypass Model:         | High collapse elements are standard                 |
| Porting Head:             | Aluminum  |
| Element Case:             | Aluminum  |
| Weight of NOF30-1NN:      | 6.6 lbs. (3.0 kg)                                   |
| Element Change Clearance: | 4.50" (115 mm)                                      |



Metric dimensions in ( ).

## Element Performance Information

| Element | Filtration Ratio Per ISO 4572/NFPA T3.10.8.8<br>Using automated particle counter (APC) calibrated per ISO 4402 |                    |                    | Filtration Ratio wrt ISO 16889<br>Using APC calibrated per ISO 11171 |                        |
|---------|--|--------------------|--------------------|--|------------------------|
|         | $\beta_x \geq 75$  | $\beta_x \geq 100$ | $\beta_x \geq 200$ | $\beta_x(c) \geq 200$  | $\beta_x(c) \geq 1000$ |
| 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) |
|---------|----------|
| NNZX3   | 11*      |
| NNZX10  | 13*      |

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

\*Based on 100 psi terminal pressure

# High-Pressure Sandwich Filter

# NOF30-05

| 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) |

**Fluid Compatibility**

NF30  
NFS30  
YF30  
CFX30

| Pressure                    | Element      |          | Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid. |         |    |    |
|-----------------------------|--------------|----------|---|---------|----|----|
|                             | Series       | Part No. |   |         |    |    |
| To<br>3000 psi<br>(210 bar) | Z-<br>Media® | NNZX3    |   | 1NNZX3  |    |    |
|                             |              | NNZX10   |   | 1NNZX10 |    |    |
|                             |              | NNZX25   |   | 1NNZX25 |    |    |
| Flow                        | gpm          | 0        |   |         |    | 12 |
|                             | (L/min)      | 0        | 20  | 40      | 45 |    |

**Element Selection**  
Based on  
Flow Rate

PLD  
DF40  
CF40  
PF40  
RFS50  
RF60

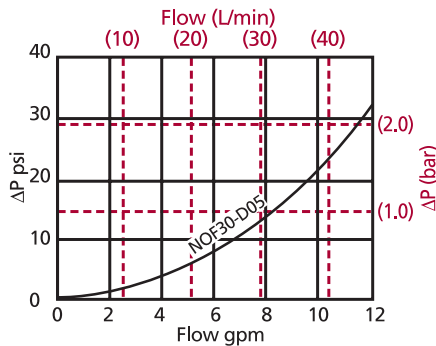
Shown above are the elements most commonly used in this housing.

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.

CF60  
CTF60

## ΔP<sub>housing</sub>

NOF30-D05 ΔP<sub>housing</sub> for fluids with sp gr = 0.86:



## ΔP<sub>element</sub>

ΔP<sub>element</sub> = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

|        |      |
|--------|------|
| NNZX3  | 1.00 |
| NNZX10 | .52  |

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

VF60  
LW60  
KF30  
TF50  
KF50  
KC50  
MKF50  
KC65

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 8 gpm (30 L/min) for NOF301NNZX1005D5 using 150 SUS (32 cSt) fluid.

### Solution:

$$\begin{aligned} \Delta P_{\text{housing}} &= 15.0 \text{ psi [1.0 bar]} \\ \Delta P_{\text{element}} &= 8 \times 0.52 \times (150 \div 150) = 4.2 \text{ psi} \\ &\text{or} \\ &= [30 \times (0.52 \div 54.9) \times (32 \div 32) = 0.3 \text{ bar}] \\ \Delta P_{\text{total}} &= 15.0 + 4.2 = 19.2 \text{ psi} \\ &\text{or} \\ &= [1.0 + 0.3 = 1.3 \text{ bar}] \end{aligned}$$

**NOF30-05**

NOF50-760

FOF60-03

NMF30

RMF60

Cartridge  
Elements

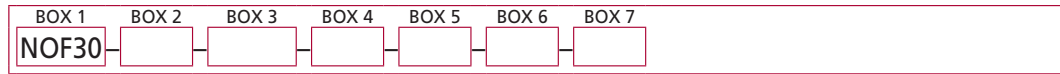
HS60

MHS60

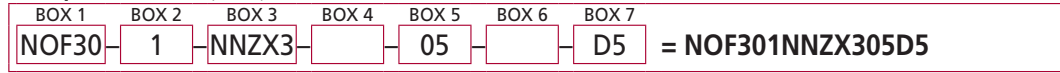
KFH50

## Filter Model Number Selection

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



Example: NOTE: One option per box



| BOX 1                | BOX 2                     | BOX 3   | BOX 4                                     | BOX 5                     |
|----------------------|---------------------------|---|---|---------------------------|
| <b>Filter Series</b> | <b>Number of Elements</b> | <b>Element Part Number</b>  | <b>Seal Material</b>                      | <b>Porting</b>            |
| NOF30                | 1                         | NNZX3 = NN size 3 μ high collapse media<br>NNZX10 = NN size 10 μ high collapse media<br>NNZX25 = NN size 25 μ high collapse media | Omit = Buna N<br>V = Viton®<br>W = Buna N | 05 = D05 subplate pattern |

| BOX 6                                  | BOX 7  |
|--|--|
| <b>Options</b>                         | <b>Dirt Alarm® Options</b>   |
| Omit = None                            | Omit = None  |
| 90 = Optional indicator setting        | Visual = D5 = Visual pop-up (60 psid indicator setting)  |
|  | Visual with Thermal Lockout = D8 = Visual w/ thermal lockout   |
| Electrical                             | MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable<br>MS5LC = Low current MS5<br>MS10 = Electrical w/ DIN connector (male end only)<br>MS10LC = Low current MS10<br>MS11 = Electrical w/ 12 ft. 4-conductor wire<br>MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only)<br>MS12LC = Low current MS12<br>MS16 = Electrical w/ weather-packed sealed connector<br>MS16LC = Low current MS16<br>MS17LC = Electrical w/ 4 pin Brad Harrison male connector |
| Electrical with Thermal Lockout        | MS5T = MS5 (see above) w/ thermal lockout<br>MS5LCT = Low current MS5T<br>MS10T = MS10 (see above) w/ thermal lockout<br>MS10LCT = Low current MS10T<br>MS12T = MS12 (see above) w/ thermal lockout<br>MS12LCT = Low current MS12T<br>MS16T = MS16 (see above) w/ thermal lockout<br>MS16LCT = Low current MS16T<br>MS17LCT = Low current MS17T  |
| Electrical Visual                      | MS13 = Supplied w/ threaded connector & light<br>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<br>MS13DCLCT = Low current MS13DCT<br>MS14DCT = MS14 (see above), direct current, w/ thermal lockout<br>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.