

Pressure Filters

HF4P Series

Flows to 570 L/min (150 USgpm)
Pressures to 345 bar (5,000 psi)



Features and Benefits

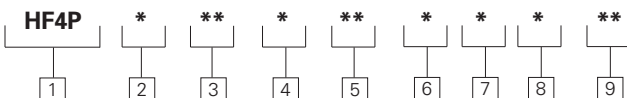
- Beta Ratio: $\beta_{x(c)} = 1000$ to ISO 16889
- Designed to comply with ANSI specifications and ISO cleanliness standards
- Visual and electrical indicators with lamp options for system design flexibility
- Conforms to HF4 specifications
- Fatigue rated to 5000 psi for maximum reliability in rugged applications
- Top loading design to ease maintenance and minimize spillage
- Multiple filter element lengths for design flexibility
- High efficiency replacement elements in standard configurations (C-Pak) to meet Target Cleanliness Levels
- High collapse elements available for non-bypass applications

Series Filter and Element Model Code

Sample model code:
HF4P1SD4LNB6C05

DESIGN SPECIFICATIONS

Rated flow:	Length 3 Length 6 Length 7	189 L/min (50 USgpm) 379 L/min (100 USgpm) 568 L/min (150 USgpm)
Fluid compatibility:	Compatible with most petroleum oil, water glycol, oil-in-water and water-in-oil fluids. Optional seals available for phosphate esters.	
Temp range:	-26°C to +121°C (-15°F to +250°F)	
Pressure rating:	Operating Fatigue	345 bar (5000 psi) 345 bar (5000 psi)
Material:	Head Bowl Lid	Ductile Iron Carbon Steel Ductile Iron
Dry weight: (Approximate)	Length 3 Length 6 Length 7	28,8 kg (63.4 lbs) 38,7 kg (85.3 lbs) 51,5 kg (113.6 lbs)



1 Filter Series - HF4P

2 Element Collapse Rating

- 1 - 10 bar (150 psi) Low Collapse
- 4 - 207 bar (3000 psi) High Collapse

3 Port options

- BD - G1½ to ISO 228
- ME - 1½" SAE 4 bolt Flange Code 61 (M12 x 1.75)
- MR - 1½" SAE 4 bolt Flange Code 62 (M16 x 2.0)
- SD - 1.875 - 12 UN SAE-24 str. Thd. (1½" tube)
- FE - 1½" SAE 4 bolt Flange Code 61 (UNC)
- FR - 1½" SAE 4 bolt Flange Code 62 (UNC)
- WS - Subplate mounting

4 Valve options

- 1 - Non-Bypass
- 4 - Bypass set at 2.9 bar (43 psi) cracking pressure
- 6 - Bypass set at 6 bar (90 psi) cracking pressure

5 Indicator options

- AN - Visual 4.9 bar (70 psi), No Connector
- LN - Visual 2 bar (30 psi), No Connector

- JN - No Indicator (plug), No Connector
- RB - Electrical 2 bar (30 psi), Brad Harrison
- RJ - Electrical 2 bar (30 psi), Hirschmann w 24 volt light
- RK - Electrical 2 bar (30 psi), Hirschmann w 115 volt light
- RL - Electrical 2 bar (30 psi), Hirschmann w 230 volt light
- RH - Electrical 2 bar (30 psi), Hirschmann
- TB - Electrical 7.9 bar (115 psi), Brad Harrison
- TJ - Electrical 7.9 bar (115 psi), Hirschmann w/ 24 volt light
- TK - Electrical 7.9 bar (115 psi), Hirschmann w/ 115 volt light
- TL - Electrical 7.9 bar (115 psi), Hirschmann w/ 230 volt light
- TH - Electrical 7.9 bar (115 psi), Hirschmann
- UB - Electrical 4.9 bar (70 psi), Brad Harrison
- UJ - Electrical 4.9 bar (70 psi), Hirschmann w 24 volt light
- UK - Electrical 4.9 bar (70 psi), Hirschmann w 115 volt light

- UL - Electrical 4.9 bar (70 psi), Hirschmann w 230 volt light
- UH - Electrical 4.9 bar (70 psi), Hirschmann

6 Seal material

- B - Buna-N
- V - Viton-A

7 Assembly Length

- mm (inch)
- 3 - 447 (17.6)
- 6 - 685.3 (27)
- 7 - 923.5 (36.4)

8 Element construction

- C - 10 bar (150 psi) Low Collapse
- H - 207 bar (3000 psi) High Collapse
- X - no element

9 Fluid cleanliness rating

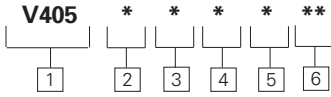
Code	Target fluid cleanliness level
03	16/14/12 or better
05	18/16/14 or better
10	20/18/15 or better
20*	22/19/16 or better
XX	no element

* C-Pak only

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V405 Element model code

(Meets HF4 Standard)

Sample model code:

V4051B3C03

1 Filter Element - V405

2 Element Collapse Rating

1 - 10 bar (150 psi)
4 - 206.9 bar (3000 psi)
High Collapse

NOTE: Use 1 only with bypass valve or monitored delta P indicator.

3 Seals

B - Buna-N
V - Viton-A

4 Element Length

mm (inch)
3 - 229 (9)
6 - 457 (18)
7 - 686 (27)

5 Element Construction

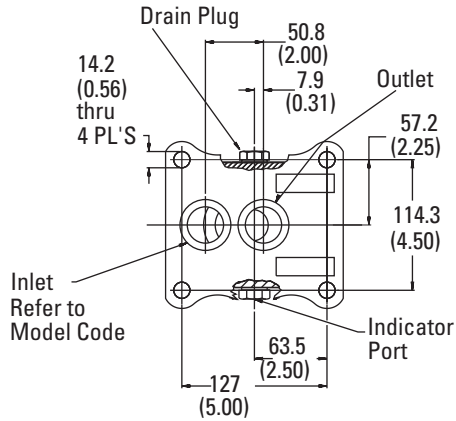
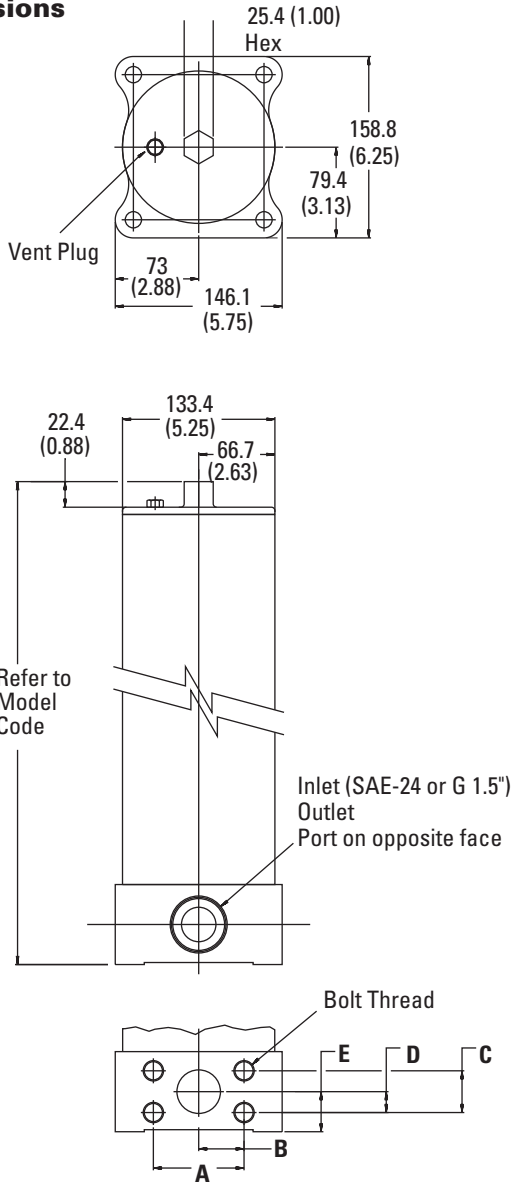
C - C-Pak (code 03, 05, 10, 20)
H - H-Pak (code 03, 05, 10)

6 Fluid Cleanliness Rating

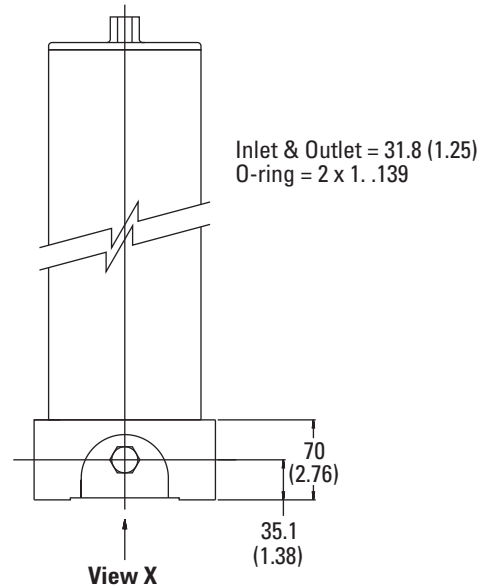
Code	Target fluid cleanliness level
03	16/14/12
05	18/16/14
10	20/18/15
20	22/19/16

Housing Dimensions

mm (inch)



View X - Subplate Mounting



	A	B	C	D	E
	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)
ME	69.8 (2.75)	37.9 (1.375)	35.7 (1.406)	17.9 (.703)	35.1 (1.38)
MR	79.3 (3.125)	39.4 (1.56)	36.5 (1.437)	18.2 (.718)	35.1 (1.38)
FE	69.8 (2.75)	37.9 (1.375)	35.7 (1.406)	17.9 (.703)	35.1 (1.38)
FR	79.3 (3.125)	39.4 (1.56)	36.5 (1.437)	18.2 (.718)	35.1 (1.38)

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Flow Data

Flow versus pressure drop:

150 SUS (32 cSt) oil with specific gravity of ≤ 0.9

HF4P Filter Elements Flow Data

'K' factor - bar/lpm (psi/gpm)

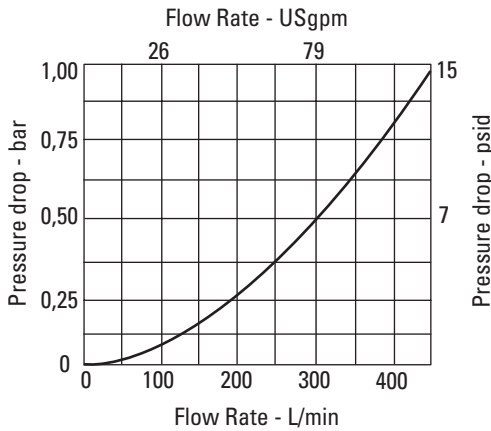
ELEMENT TYPE / SIZE		MICRON RATING			
		03	05	10	20
C -pak	3	0.003 (0.168)	0.003 (0.140)	0.001 (0.078)	0.001 (0.044)
	6	0.001 (0.080)	0.001 (0.066)	0.001 (0.037)	0.001 (0.021)
	7	0.001 (0.051)	0.001 (0.043)	0.001 (0.024)	0.001 (0.013)
H -pak	3	0.004 (0.206)	0.003 (0.145)	0.002 (0.088)	xxx
	6	0.002 (0.096)	0.001 (0.068)	0.001 (0.041)	xxx
	7	0.001 (0.062)	0.001 (0.044)	0.001 (0.026)	xxx

Note: For flow in gpm, use the values inside the brackets.

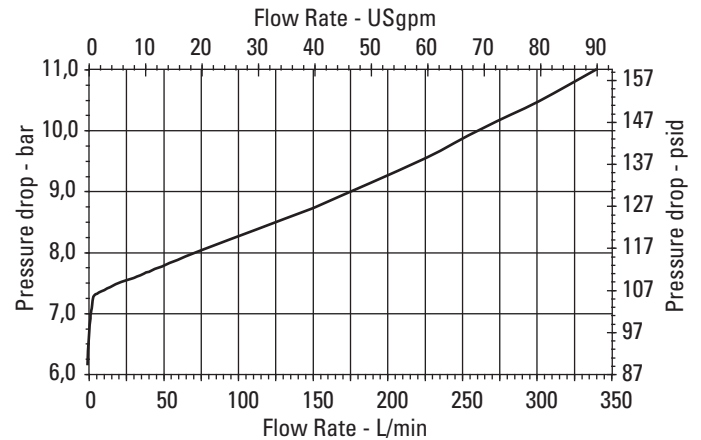
Note: The values for bar/lpm have been rounded to the third decimal.

Housing/Bypass Valve Flow Data

Housing



Bypass Valve



Sample ΔP Calculation :

HF4P1SD4LNB6C05 - Filter assembly having '6' length filter element with micron rating code '05' at 200 L/min flow rate using a hydraulic fluid at 46 cSt viscosity & specific gravity (sp.gr.)0.8.

ΔP Assembly	=	ΔP Housing	+	ΔP Element
	=	Housing factor from graph $\times \text{sp.gr.}(\text{actual})/0.9$	+	Flow Rate (Lpm) \times Element 'K' factor (bar/lpm) \times [actual cSt / 32] \times [Sp.Gr(actual) / 0.9]
	=	0.26 \times 0.8/0.9	+	200 \times 0.001 \times 46/32 \times 0.8/0.9
	=	0.220	+	0.25
	=	0.47 bar		