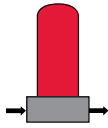


HIGH PRESSURE FILTERS

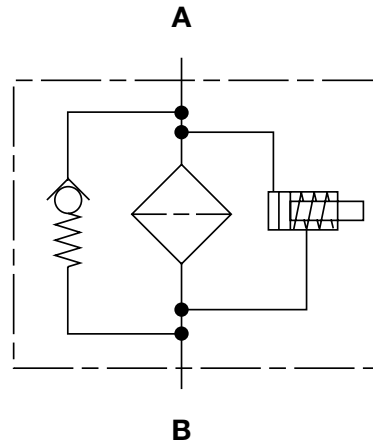
HF4P Series

Inline Filters

5000 psi • up to 120 gpm



Hydraulic Symbol



Features

- Meets HF4 automotive standard
- Non-welded housing design reduces stress concentrations and prevents fatigue failure.
- Inlet/Outlet port options include SAE straight thread O-ring boss, SAE flange code 62 and code 61 (optional) BSPP and subplate mounting to allow easy installation without costly adapters.
- O-ring seals are used to provide positive, reliable sealing. A choice of O-ring materials (nitrile rubber or fluorocarbon elastomer) provides compatibility with petroleum oils, synthetic fluids, water-glycols, oil/water emulsions, and high water based fluids.
- The element filter housing is permanently mounted above the filter head for easy top access and minimal clearance to remove elements for replacement.
- Clogging indicators are actuated by differential pressure and have no external dynamic seal. High reliability is achieved and magnetic indicator actuation eliminates a potential leak point.
- A poppet type bypass valve located in filter head base is mounted between the inlet and outlet port to provide positive sealing during normal operation and fast response during cold starts and flow surges.
- Fatigue pressure rating equals maximum allowable working pressure rating.

Technical Specifications

| | |
|---|--|
| Mounting Method | 4 mounting holes |
| Port Connection | SAE-24, 1 1/2" BSPP, 1 1/2" SAE Flange Code 61, 1 1/2" SAE Flange Code 62, Manifold Mount |
| Flow Direction | Inlet: Side Outlet: Side <i>(opposite each other)</i> |
| Construction Materials | Head, Cap Ductile iron Housing Steel |
| Flow Capacity | 9" 50 gpm (189 lpm) 18" 100 gpm (378 lpm) 27" 120 gpm (454 lpm) |
| Housing Pressure Rating | Max. Allowable Working Pressure 5000 psi (345 bar) Fatigue Pressure 3500 psi (241 bar) @ 1 million cycles Burst Pressure 14,400 psi (992 bar) |
| Element Collapse Pressure Rating | BH 3045 psid (210 bar) BN 145 psid (10 bar) |
| Fluid Temperature Range | 14°F to 212°F (-10°C to 100°C) Consult HYDAC for applications operating below 14°F (-10°C) |
| Fluid Compatibility | Compatible with all hydrocarbon based, synthetic, water glycol, oil/water emulsion, and high water based fluids when the appropriate seals are selected. |
| Indicator Trip Pressure | $\Delta P = 29$ psid (2 bar) -10% <i>(optional)</i> $\Delta P = 72$ psid (5 bar) -10% <i>(standard)</i> $\Delta P = 116$ psid (8 bar) -10% <i>(optional on non-bypass filters)</i> |
| Bypass Valve Cracking Pressure | $\Delta P = 43$ psid (3 bar) +10% <i>(optional)</i> $\Delta P = 87$ psid (6 bar) +10% <i>(standard)</i> Non Bypass Available |

Applications



Automotive



Construction



Industrial



Power Generation



Pulp & Paper

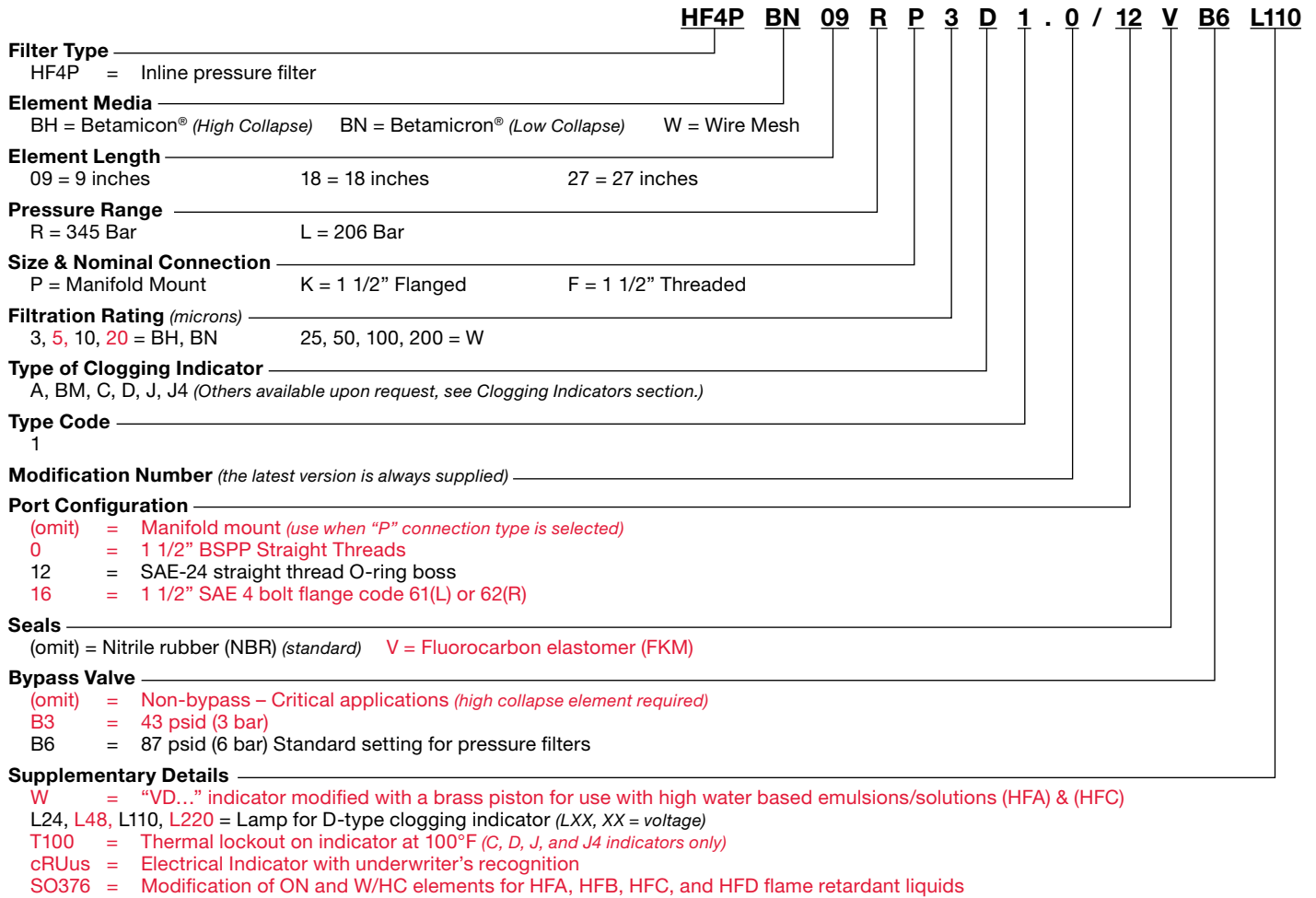


Railways

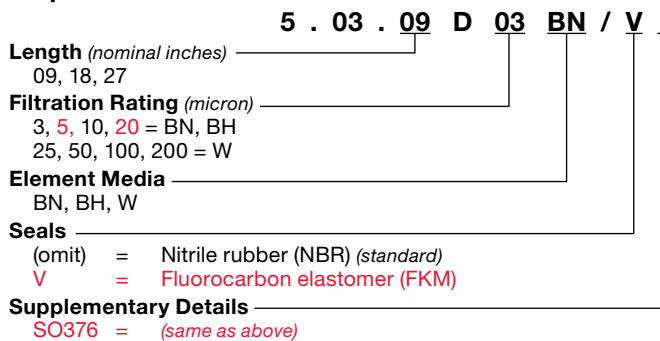


Steel / Heavy Industry

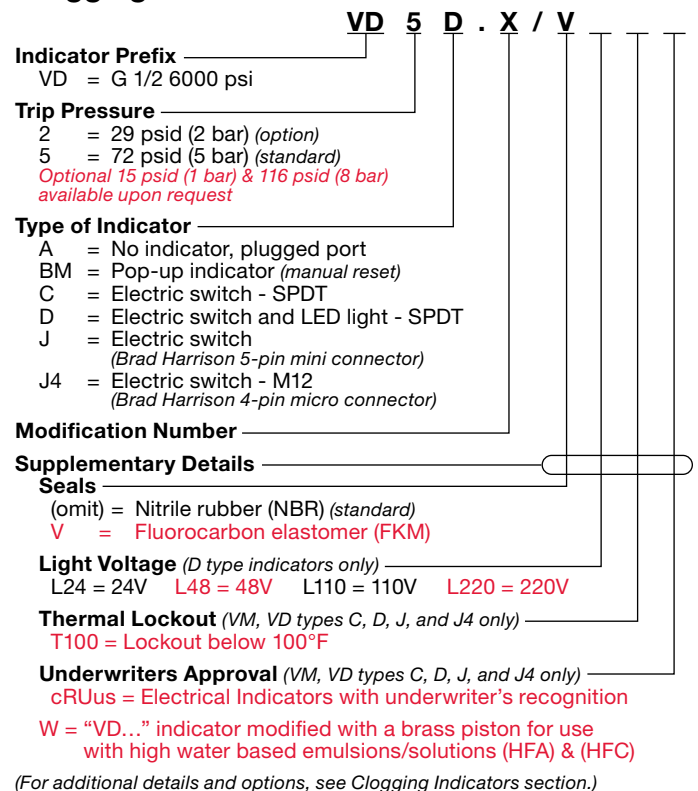
Model Code



Replacement Element Model Code



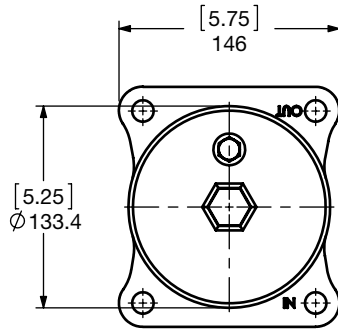
Clogging Indicator Model Code



Model Codes Containing RED are non-stock items — Minimum quantities may apply — Contact HYDAC for information and availability

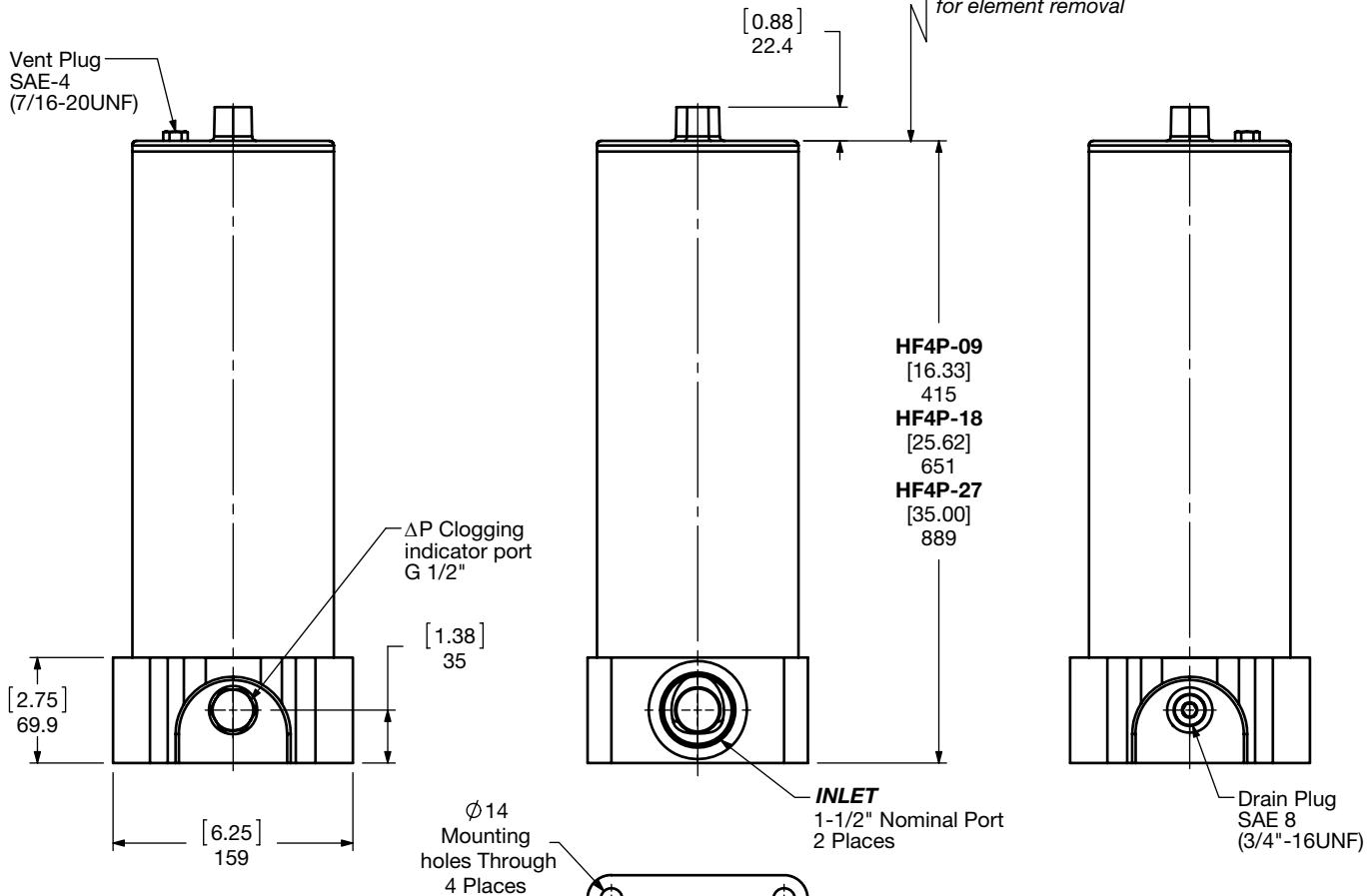
HIGH PRESSURE FILTERS

Dimensions HF4P Inline



HF4P-09 [12.00]
305
HF4P-18 [21.00]
533
HF4P-27 [30.00]
762
*Clearance required
for element removal*

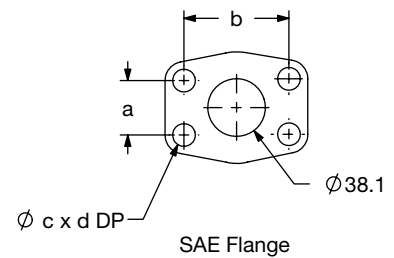
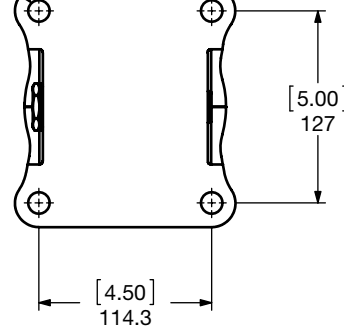
Vent Plug
SAE-4
(7/16-20UNF)



HF4P-09 [16.33]
415
HF4P-18 [25.62]
651
HF4P-27 [35.00]
889

Ø 14
Mounting
holes Through
4 Places

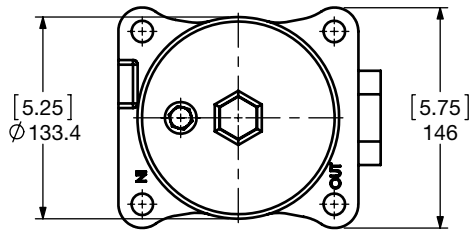
| Flange Details | a | b | c | d |
|-------------------|------------------|------------------|-----------|--------------|
| Code 61 | (1.406) 35.7 | (2.750) 69.8 | 1/2-13UNC | (1.06) 27 |
| Code 62 | (1.437) 36.50 | (3.125) 79.38 | 5/8-11UNC | (1.38) 35 |



| Size | 09 | 18 | 27 |
|---------------|------|------|-------|
| Weight (lbs.) | 69.9 | 98.4 | 132.8 |

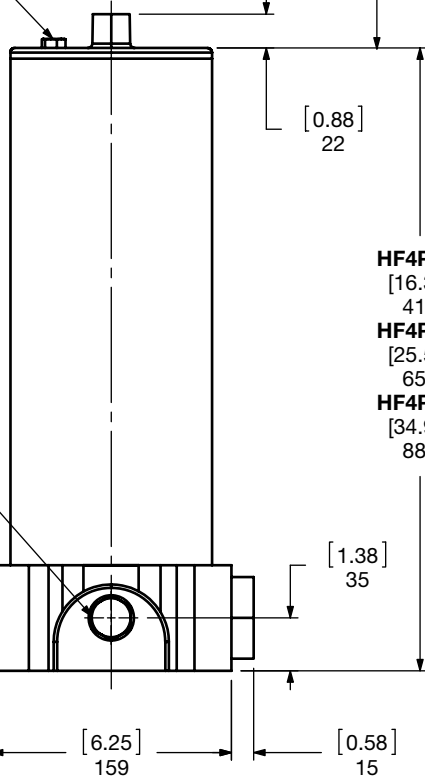
Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include element.
For complete dimensions please contact HYDAC to request a certified print.

Dimensions HF4P Manifold



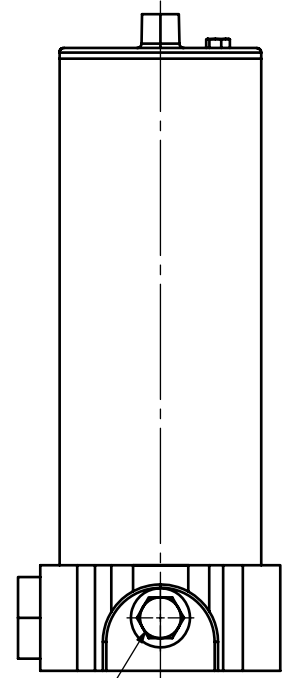
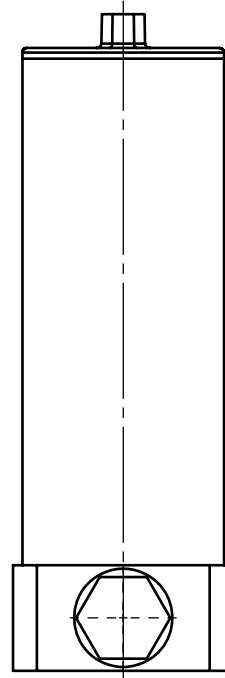
HF4P-09 [12.00] 305
HF4P-18 [21.00] 533
HF4P-27 [30.00] 762
Clearance required for element removal

Vent Plug
SAE 4
(7/16"-20UNF)

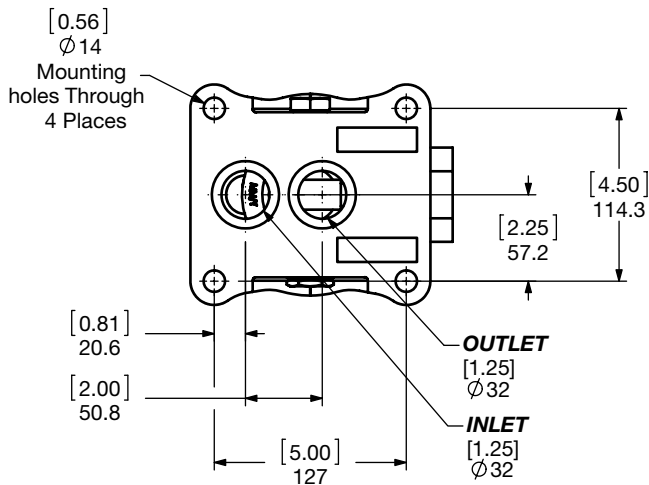


HF4P-09 [16.30] 414
HF4P-18 [25.59] 650
HF4P-27 [34.98] 888

Drain Plug
SAE 8
(3/4"-16UNF)



ΔP Clotting Indicator Port
G 1/2"



| Size | 09 | 18 | 27 |
|---------------|------|-------|-------|
| Weight (lbs.) | 71.7 | 100.2 | 134.6 |

Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include element. For complete dimensions please contact HYDAC to request a certified print.

HIGH PRESSURE FILTERS

Sizing Information

Total pressure loss through the filter is as follows:

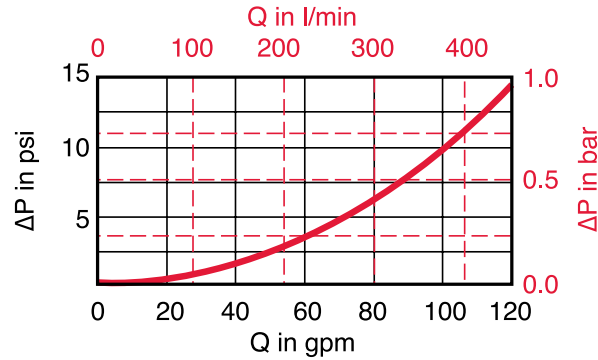
$$\text{Assembly } \Delta P = \text{Housing } \Delta P + \text{Element } \Delta P$$

Housing Curve:

Pressure loss through housing is as follows:

$$\text{Housing } \Delta P = \text{Housing Curve } \Delta P \times \frac{\text{Actual Specific Gravity}}{0.86}$$

Adjustments must be made for viscosity & specific gravity of the fluid to be used! (see "Sizing HYDAC Filter Assemblies" in Section B - Overview)



Element K Factors

$$\Delta P \text{ Elements} = \text{Elements (K) Flow Factor} \times \text{Flow Rate (gpm)} \times \frac{\text{Actual Viscosity (SUS)} \times \text{Actual Specific Gravity}}{141 \text{ SUS} \times 0.86}$$

(From Tables Below)

| Autospec HF4 Depth | 5.03.XXDXXBN (Low Collapse) | | | |
|--------------------|-----------------------------|-------|-------|-------|
| Size | 3 μm | 5 μm | 10 μm | 20 μm |
| 5.03.09DXXBN | 0.168 | 0.141 | 0.079 | 0.044 |
| 5.03.18DXXBN | 0.080 | 0.067 | 0.038 | 0.021 |
| 5.03.27DXXBN | 0.052 | 0.043 | 0.024 | 0.014 |

| Autospec HF4 Depth | 5.03.XXDXXBH (High Collapse) | | | |
|--------------------|------------------------------|-------|-------|-------|
| Size | 3 μm | 5 μm | 10 μm | 20 μm |
| 5.03.09DXXBH | 0.207 | 0.146 | 0.089 | 0.047 |
| 5.03.18DXXBH | 0.097 | 0.068 | 0.041 | 0.022 |
| 5.03.27DXXBH | 0.063 | 0.044 | 0.027 | 0.014 |

| Autospec HF4 Wire Mesh | 5.03.XXDXXW | |
|------------------------|---------------------|--|
| Size | 25, 50, 100, 200 μm | |
| 5.03.09DXXW | 0.007 | |
| 5.03.18DXXW | 0.004 | |
| 5.03.27DXXW | 0.002 | |

All Element K Factors in psi / gpm.

