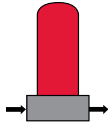


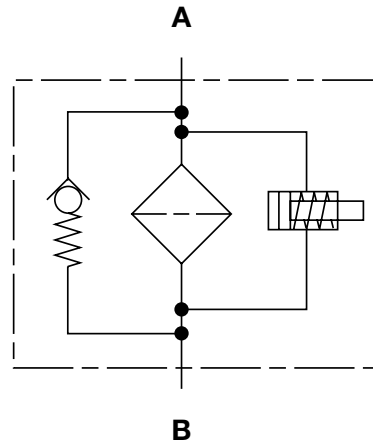
## HF4P Series

### 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, BSPP and subplate mounting to allow easy installation without costly adapters.
- O-ring seals are used to provide positive, reliable sealing. Choice of O-ring materials (Nitrile, Fluoroelastomer, EPDM) provides compatibility with petroleum oils, synthetic fluids, water-glycols, oil/water emulsions, and high water base fluids.
- Screw-in bowl mounted below the filter head requires minimal clearance to remove the element for replacement, and contaminated fluid cannot be washed downstream when element is serviced.
- 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 is typically mounted out of the flow path 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.

### Applications



Automotive



Construction



Industrial



Power Generation



Pulp & Paper



Railways

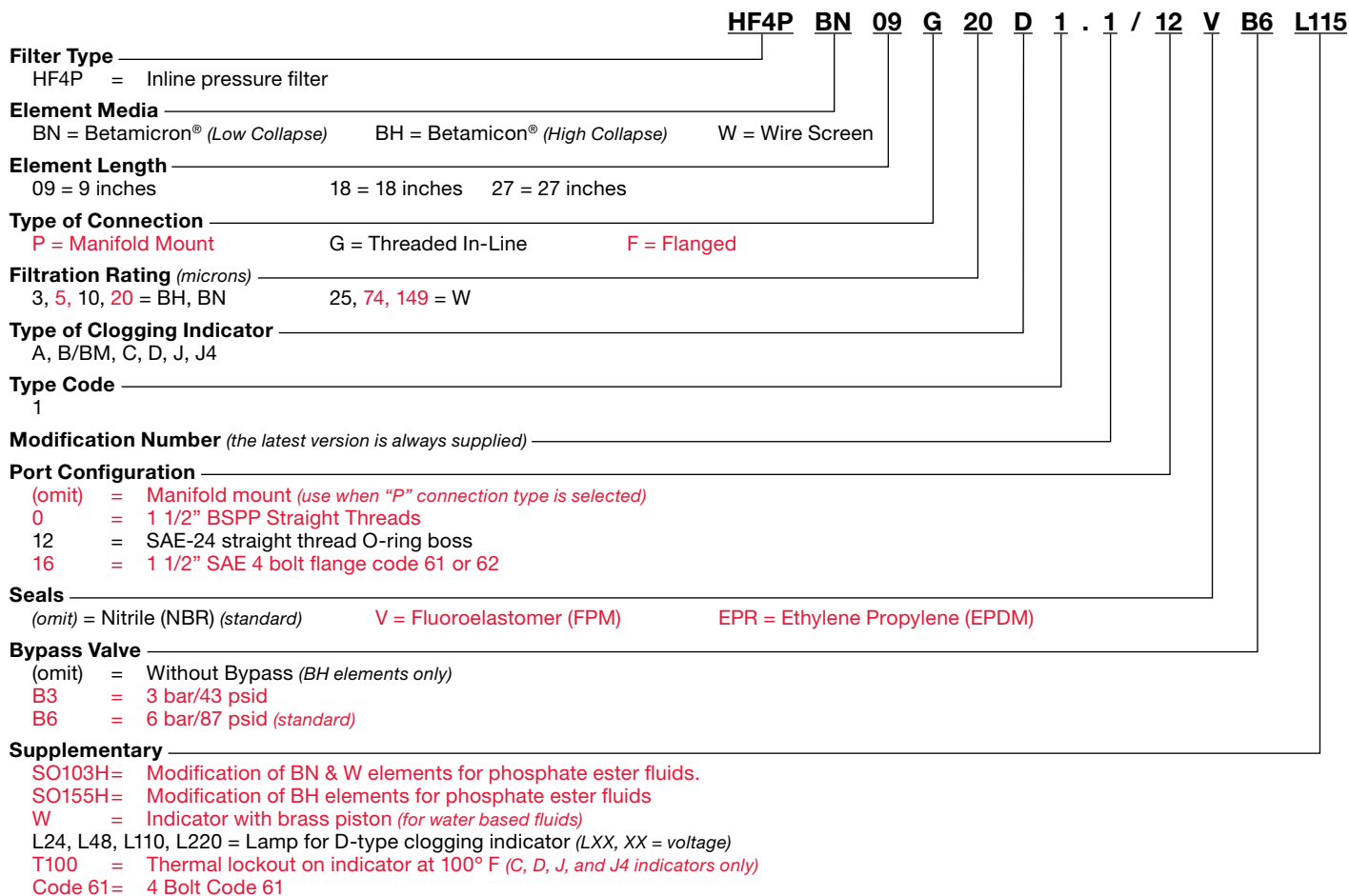


Steel / Heavy Industry

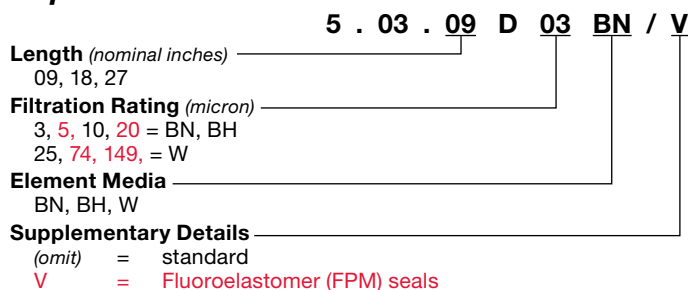
### Technical Details

|   |   |
|---|---|
| <b>Mounting Method</b>                  | 4 mounting holes  |
| <b>Port Connection</b>                  | SAE-24, 1 1/2" BSPP, 1 1/2" SAE Flange Code 61, 1 1/2" SAE Flange Code 62, Manifold Mount   |
| <b>Flow Direction</b>                   | Inlet: Side      Outlet: Side<br><i>(opposite each other)</i>   |
| <b>Construction Materials</b>           | Head, Cap      Ductile iron<br>Housing      Steel   |
| <b>Flow Capacity</b>                    | 9"      50 gpm (189 lpm)<br>18"      100 gpm (378 lpm)<br>27"      120 gpm (454 lpm)  |
| <b>Housing Pressure Rating</b>          | Max. Operating Pressure      5000 psi (345 bar)<br>Proof Pressure      7500 psi (517 bar)<br>Fatigue Pressure      5000 psi (345 bar) @ 1 million cycles<br>Burst Pressure      15,000 psi (1040 bar)   |
| <b>Element Collapse Pressure Rating</b> | BH      3045 psid (210 bar)<br>BN      150 psid (10 bar)  |
| <b>Fluid Temperature Range</b>          | -22° to 250°F (-30° to 121°C)   |
| <b>Fluid Compatibility</b>              | Compatible with all petroleum oils and synthetic fluids rated for use with Fluoroelastomer or Ethylene Propylene seals. Contact HYDAC for information on special housing and element constructions available for use with water glycols, oil/water emulsions, and HWBF. |
| <b>Indicator Trip Pressure</b>          | $\Delta P = 29$ psid (2 bar) -10% <i>(optional)</i><br>$\Delta P = 72$ psid (5 bar) -10% <i>(standard)</i><br>$\Delta P = 116$ psid (8 bar) -10% <i>(optional on bypass)</i>  |
| <b>Bypass Valve Cracking Pressure</b>   | $\Delta P = 43$ psid (3 bar) +10% <i>(optional)</i><br>$\Delta P = 87$ psid (6 bar) +10% <i>(standard)</i><br>Non Bypass Available  |

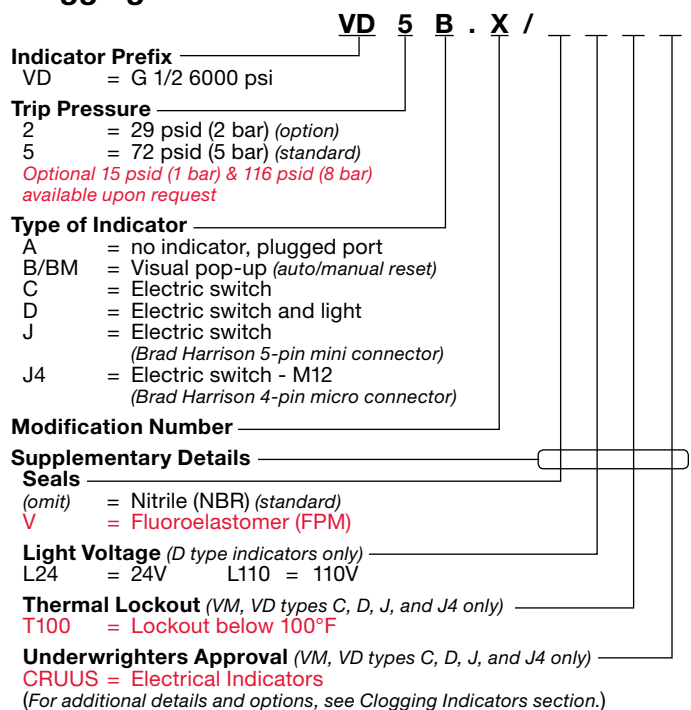
## Model Code



## Replacement Element Model Code

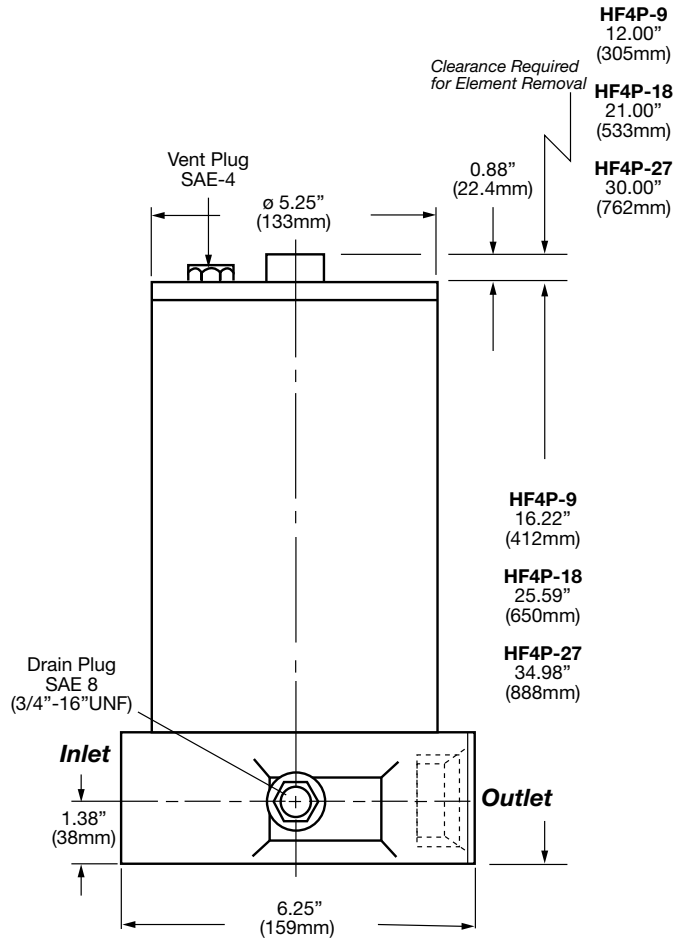


## Clogging Indicator Model Code

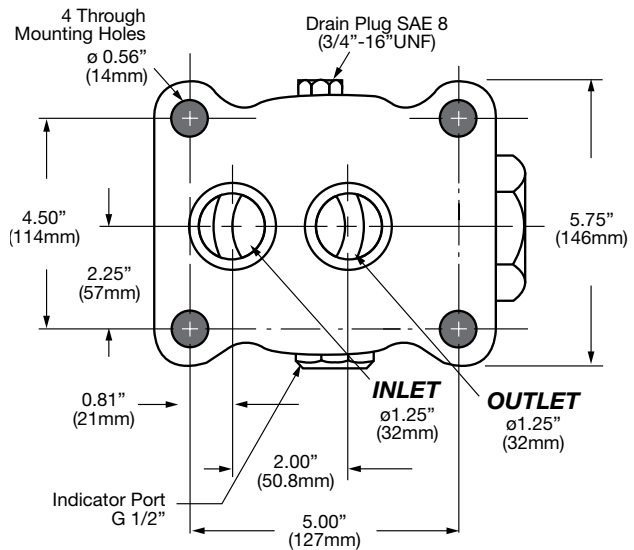
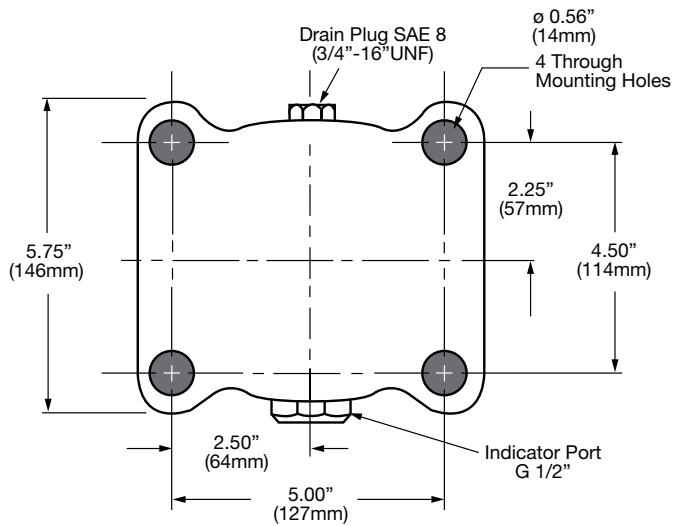
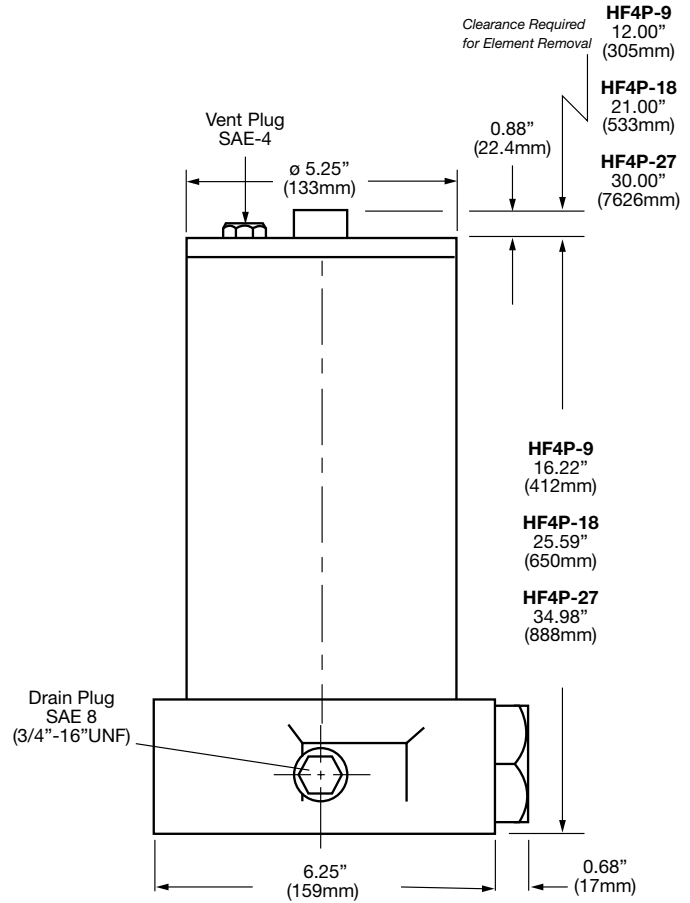


Model Codes Containing RED are non-stock items — Minimum quantities may apply — Contact HYDAC for information and availability

## Dimensions HF4P Inline



## HF4P Manifold



| Size          | Inline | 09   | 18   | 27    | Manifold | 09   | 18   | 27    |
|---------------|--------|------|------|-------|----------|------|------|-------|
| Weight (lbs.) |        | 59.4 | 79.3 | 105.6 |          | 61.2 | 81.1 | 107.4 |

Dimensions shown are for general information and overall envelope size only. Weights listed are without element. For complete dimensions please contact HYDAC to request a certified print.

## Sizing Information

Total pressure loss through the filter is as follows:

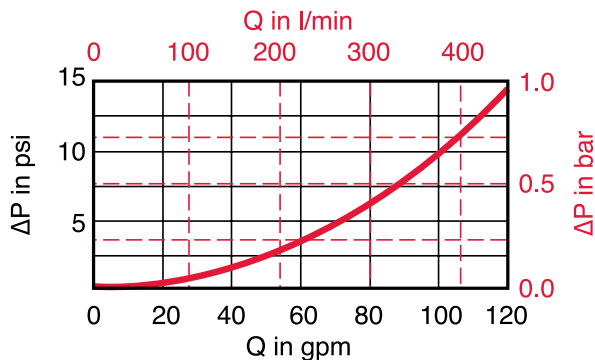
$$\text{Assembly } \Delta P = \text{Housing } \Delta P + \text{Element } \Delta P$$

### 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 section on page 19)



## Element K Factors

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

(From Tables Below)

| Size | 5.03.XXD...BN |        |        |        |
|------|---------------|--------|--------|--------|
|      | 3 μm          | 5 μm   | 10 μm  | 20 μm  |
| 09   | 0.1680        | 0.1405 | 0.0788 | 0.0443 |
| 18   | 0.0800        | 0.0669 | 0.0375 | 0.0211 |
| 27   | 0.0517        | 0.0432 | 0.0242 | 0.0136 |

| Size | 5.03.XXD...BH |        |        |        |
|------|---------------|--------|--------|--------|
|      | 3 μm          | 5 μm   | 10 μm  | 20 μm  |
| 09   | 0.2068        | 0.1457 | 0.0886 | 0.0465 |
| 18   | 0.0967        | 0.0681 | 0.0414 | 0.0217 |
| 27   | 0.0630        | 0.0444 | 0.0270 | 0.0142 |

| Size | 5.03.XXD...W |        |        |
|------|--------------|--------|--------|
|      | 25 μm        | 74 μm  | 149 μm |
| 09   | 0.0073       | 0.0073 | 0.0073 |
| 18   | 0.0035       | 0.0035 | 0.0035 |
| 27   | 0.0023       | 0.0023 | 0.0023 |

All Element K Factors in psi / gpm.