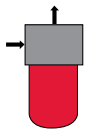


# SPECIAL ORDER FILTERS - HIGH PRESSURE

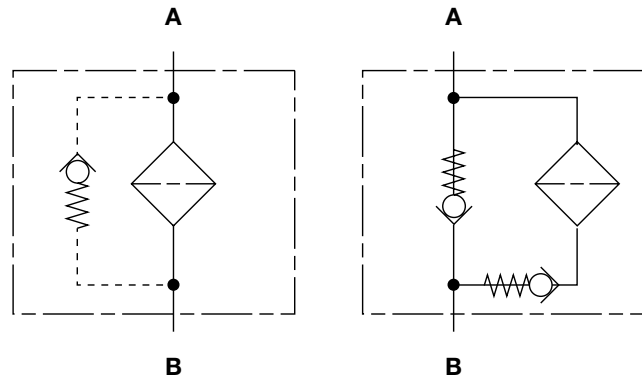
## HDF/HDFF Series

Inline Filters & Inline Filters With Reversible Flow

4060 psi • up to 100 gpm



### Hydraulic Symbol



### Features

- Non-welded housing design reduces stress concentrations and prevents fatigue failure.
- Choice of SAE straight thread O-ring boss, and straight thread BSPP (sizes 300 - 900) to allow easy installation without costly adapters.
- O-ring seals are used to provide positive, reliable sealing. We offer a choice of O-ring materials (Nitrile rubber or Fluorocarbon elastomer), to provide compatibility with petroleum oils, synthetic fluids, water-glycols, oil/water emulsions, and high water based 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.
- HYDAC Differential Pressure Indicators have no external dynamic seal. This results in a high system reliability due to magnetic actuation, thus eliminating a potential leak point.
- A poppet-type bypass valve (optional) provides positive sealing during normal operation and fast opening during cold starts and flow surges.
- The HDF is available with a bypass valve. The HDFF is offered in non bypass only.
- Fatigue pressure ratings equal maximum allowable working pressure rating.
- Inlet/outlet ports in "L" configuration
- No element valve-only available with HDF in "L" configuration.

### Technical Specifications

<b>Mounting Method</b>	4 mounting holes
<b>Port Connection</b> 300, 450, 650, 900:	1" SAE-16 parallel straight thread or 1" BSPP or 1 1/4" SAE-20 parallel straight thread or 1 1/4" BSPP or 1 1/2" SAE-24 parallel straight thread or 1 1/2" BSPP
<b>Flow Direction</b>	Inlet: Side      Outlet: Top
<b>Construction Materials</b>	Head: Ductile iron Bowl: Steel
<b>Flow Capacity</b>	300: 30 gpm (114 lpm) 450: 60 gpm (227 lpm) 650: 90 gpm (340 lpm) 900: 100 gpm (378.5 lpm)
<b>Housing Pressure Rating</b>	Max. Allowable Working Pressure: 4060 psi (280 bar) Fatigue Pressure: 4060 psi (280 bar) @ 1 million cycles 6090 psi (420 bar) @ 250,000 cycles Burst Pressure: (Consult HYDAC)
<b>Element Collapse Pressure Rating</b>	BH4HC: 3045 psid (210 bar) ON: 290 psid (20 bar)
<b>Fluid Temp. Range</b>	14°F to 212°F (-10°C to 100°C) Consult HYDAC for applications operating below 14°F (-10°C)
<b>Fluid Compatibility</b>	Compatible with all hydrocarbon based, synthetic, water glycol, oil/water emulsion, and high water based fluids when the appropriate seals are selected.
<b>Indicator Trip Pressure</b>	$\Delta P = 29$ psid (2 bar) -10% (optional) $\Delta P = 72$ psid (5 bar) -10% (standard) $\Delta P = 116$ psid (8 bar) -10% (optional non bypass)
<b>Bypass Valve Cracking Pressure</b>	$\Delta P = 43$ psid (3 bar) +10% (optional-HDF only) $\Delta P = 87$ psid (6 bar) +10% (standard) Non Bypass Available for HDF (HDFF available only with no bypass)

### Applications



Agricultural



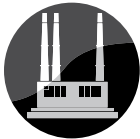
Automotive



Construction



Gearboxes



Industrial



Offshore



Commercial Municipal



Power Generation



Pulp & Paper



Railways

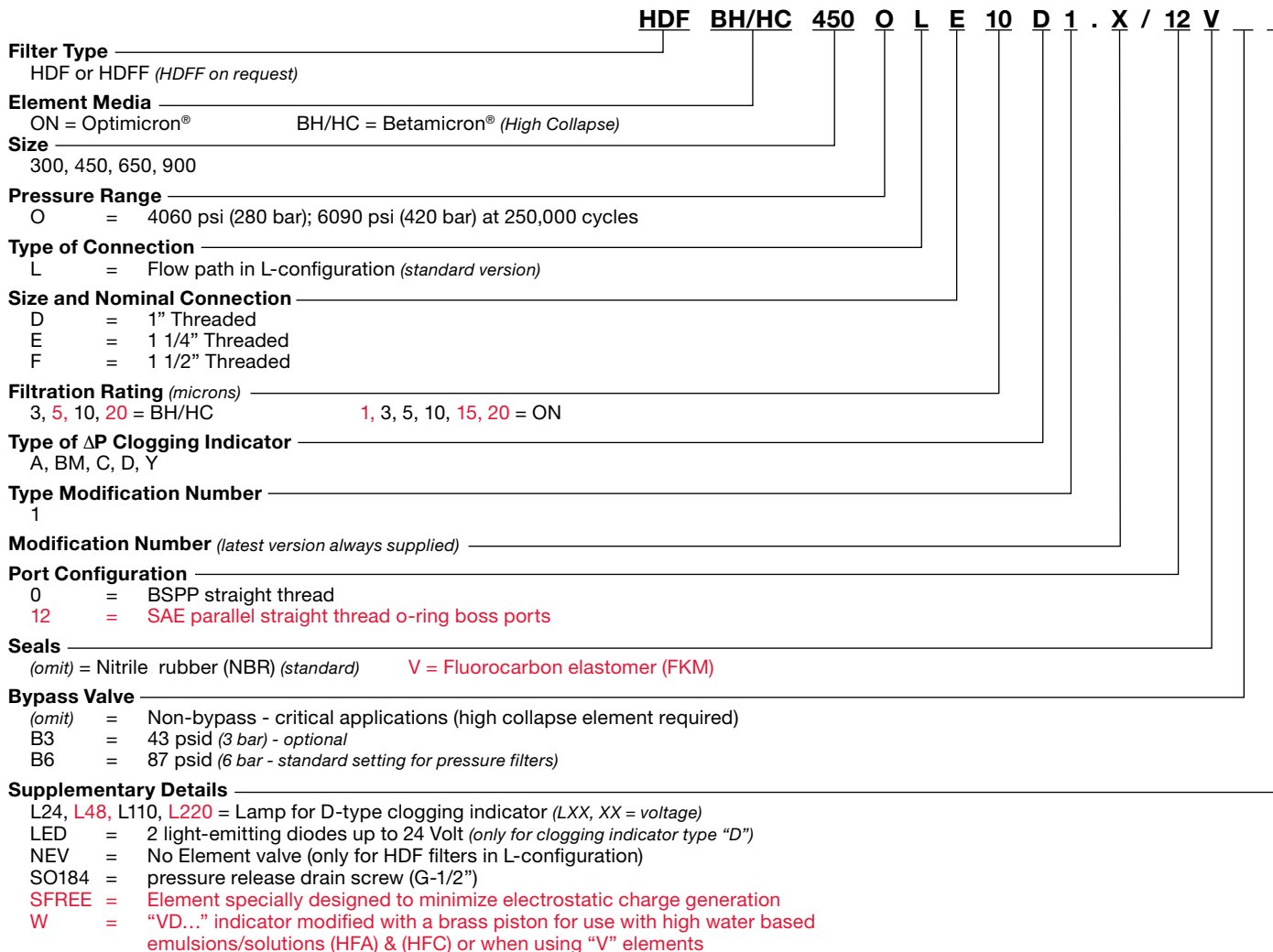


Shipbuilding

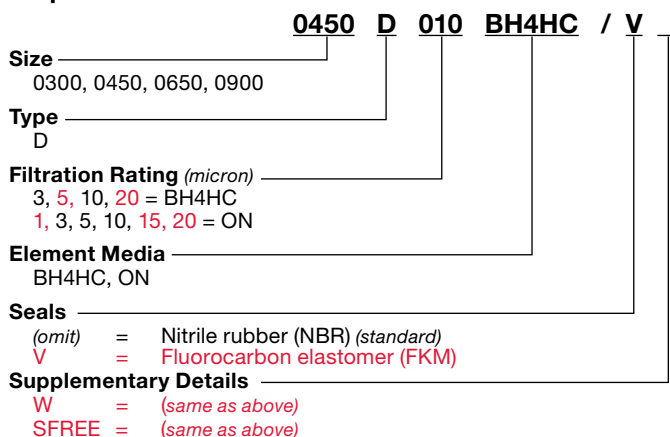


Steel / Heavy Industry

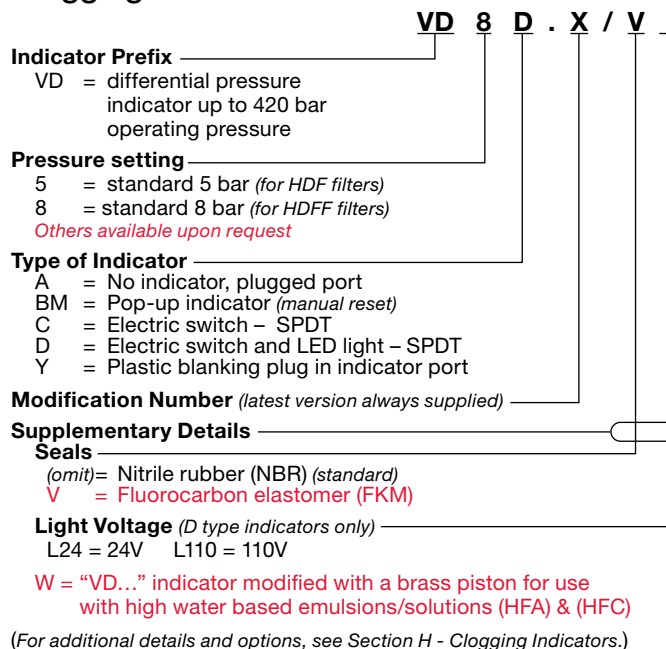
## Model Code



## Replacement Element Model Code



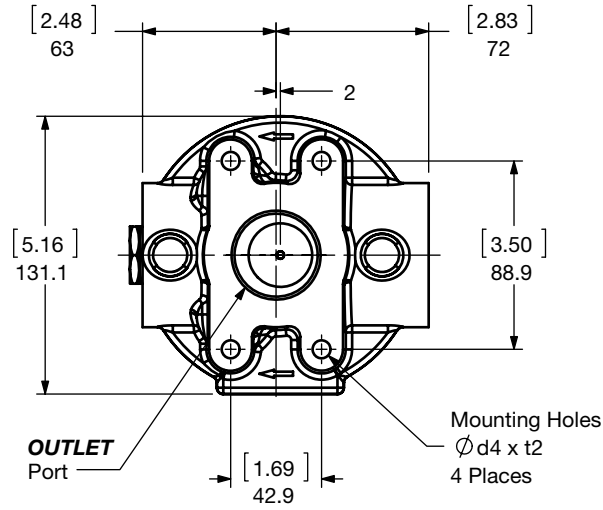
## Clogging Indicator Model Code



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

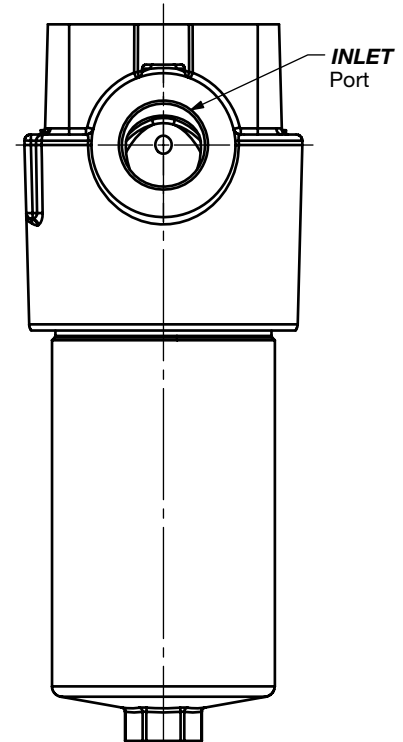
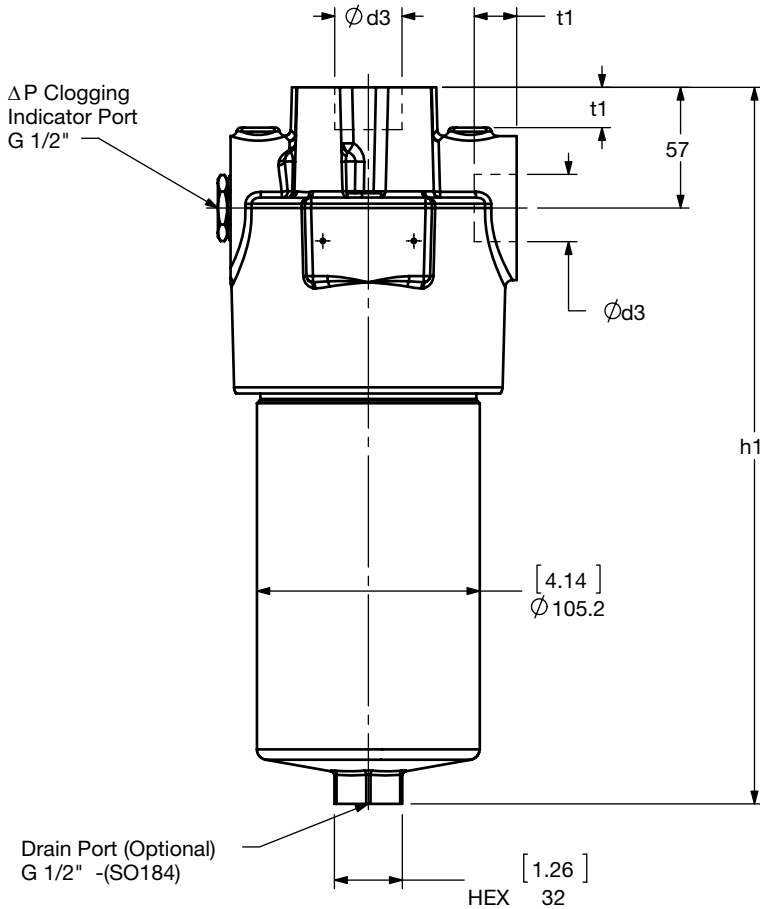
# SPECIAL ORDER FILTERS - HIGH PRESSURE

## Dimensions HDF/HDFF 300-900



HDF/HDFF	h1
300	[9.680] 246
450	[13.35] 339
650	[18.11] 460
900	[22.28] 566

$\phi d3$	$t1$	$\phi d4$	$t2$
G1	[0.71] 18	M10 X 1.5	[0.71] 18
G1-1/4	[0.79] 20		
G1-1/2	[0.87] 22		
SAE-16	[0.75] 19	3/8-24UNF-2B	[0.55] 14
SAE-20	[0.75] 19		
SAE-24	[0.75] 19		



Size	300	450	650	900
Weight (lbs.)	24.7	28.9	35.8	47.4

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.

## Sizing Information

Total pressure loss through the filter is as follows:

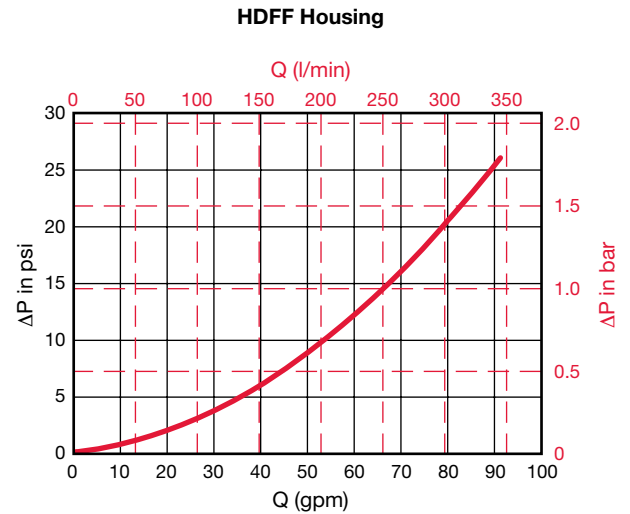
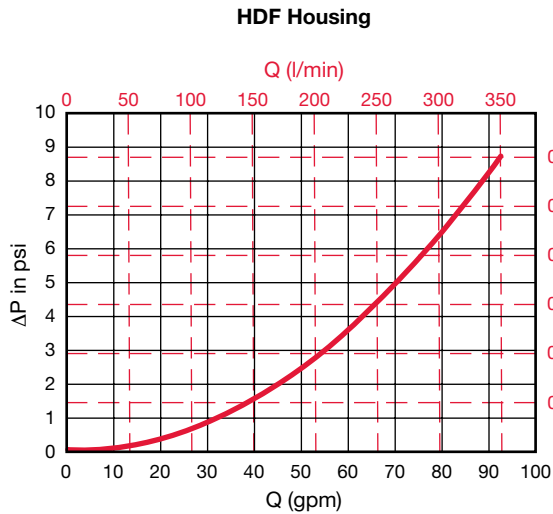
$$\text{Assembly } \Delta P = \text{Housing } \Delta P + \text{Element } \Delta P$$

### 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)

Optimicron Size	...D...ON Elements					
	1 μm	3 μm	5 μm	10 μm	15 μm	20 μm
0300 D XXX ON	0.801	0.488	0.391	0.268	0.154	0.143
0450 D XXX ON	0.401	0.244	0.193	0.131	0.077	0.069
0650 D XXX ON	0.245	0.148	0.121	0.081	0.047	0.044
0900 D XXX ON	0.185	0.115	0.092	0.06	0.036	0.035

Betamicron Size	...D...BH4HC Elements (High Collapse)			
	3 μm	5 μm	10 μm	20 μm
0300 D XXX BH4HC	0.878	0.488	0.390	0.181
0450 D XXX BH4HC	0.428	0.236	0.187	0.088
0650 D XXX BH4HC	0.258	0.143	0.115	0.055
0900 D XXX BH4HC	0.192	0.110	0.088	0.038

All Element K Factors in psi / gpm.