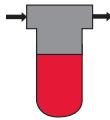


MEDIUM PRESSURE FILTERS

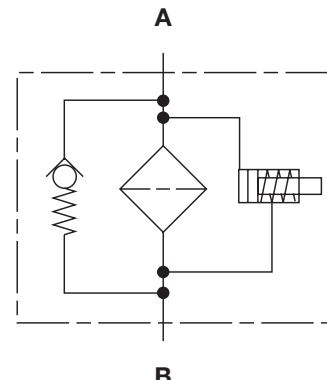
LPF Series

Inline Filters

725 psi • up to 74 gpm



Hydraulic Symbol



Features

- LPF filters are manufactured with cast aluminum head and aluminum cold formed bowls.
- Aluminum alloy is water tolerant - anodization is not required for water based fluids (HWBF).
- LPF filters are a desirable substitute for spin-on filters when dynamic fluid conditions call for the superior durability and leak-proof quality of a well-constructed cartridge filter.
- Quick-response, bypass valves, located in the filter head, protect against high differential pressures caused by cold start-ups, flow surges and pressure spikes. Filters can also be supplied without bypasses.
- The simple inline design minimizes pressure drop and provides the significant benefit of compactness. The use of lightweight materials, makes these filters ideal for mobile equipment applications.

Applications



Agricultural



Automotive



Construction



Industrial



Steel / Heavy Industry

Technical Specifications

Mounting Method	35 - 55: 3 mounting holes 160 - 280: 2 mounting holes
Port Connection	35 - 55 SAE-8, 1/2" BSPP 160 - 280 SAE-20, 1 1/4" BSPP
Flow Direction	Inlet: Side Outlet: Side
Construction Materials	Head Cast Aluminum Bowl Aluminum Extrusion
Flow Capacity	35 9 gpm (35 lpm) 55 15 gpm (55 lpm) 160 42 gpm (160 lpm) 240 63 gpm (240 lpm) 280 74 gpm (280 lpm)
Housing Pressure Rating	Max. Allowable Working Pressure 35 - 55 580 psi (40 bar) 160 - 280 725 psi (50 bar)* *Note: 580 psi (40 bar) when using BF indicator
	Fatigue Pressure 35 - 55 580 psi (40 bar) (10 ⁷ cycles) 160 - 280 725 psi (50 bar) (10 ⁶ cycles)
	Burst Pressure 35 - 55 Contact HYDAC 160 - 280 > 3625 psi (200 bar)
Element Collapse Pressure Rating	BH4HC, V 3045 psid (210 bar) ON, W/HC 290 psid (20 bar)
Fluid Temp. Range	-22°F to 212°F (-30°C to 100°C) Consult HYDAC for applications operating below -22°F (-30°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
ΔP Indicator Trip Pressure	ΔP = 29 psid (2 bar) -10% (optional) ΔP = 36.25 psid (2.5 bar) (BF indicator) ΔP = 72 psid (5 bar) -10% (standard)
Bypass Valve Cracking Pressure	ΔP = 43 psid (3 bar) +10% (optional) ΔP = 87 psid (6 bar) +10% (standard sizes 160 - 660) ΔP = 100 psid (7 bar) +10% (standard sizes 35 / 55)

Model Code

Filter Type	LPF	ON	280	G	E	3	B	1 . 2 / 12	B6
LPF Inline filter									
Element Media	ON = Optimicron® (Low Collapse) BH/HC = Betamicron® (High Collapse) W/HC = Wire Mesh								
Size	35, 55, 160, 240, 280								
Operating Pressure	G = 725 psi (sizes 160, 240, 280) E = 580 psi (size 35 & 55)								
Type of Connection	B = 1/2" threaded, SAE, BSPP (LPF 35,55) E = 1 1/4" threaded SAE, BSPP (LPF 160-280)								
Filtration Rating (microns)	1, 3, 5, 10, 15, 20 = ON 3, 5, 10, 20 = BH/HC 25, 50, 100, 200 = W/HC								
Type of ΔP Clogging Indicator	A, B, BM, BF, C, D (Others available upon request, see Clogging Indicators section.)								
Type Number	1								
Modification Number (latest version always supplied)									
Port Configuration	0 = BSPP Ports (160 - 280 = G 1 1/4") 12 = SAE Parallel Straight Thread Ports								
Seals	(omit) = Nitrile rubber (NBR) (standard) V = Fluorocarbon elastomer (FKM) EPR = Ethylene propylene rubber (EPR)								
Bypass Valve	(omit) = Without Bypass (BH4HC elements recommended) B6 = 87 psid bypass (standard) (sizes 160 - 280 only) B3 = 43 psid bypass (optional) B7 = 102 psid bypass (standard) (sizes 35 - 55 only)								

L24, L48, L110, L220 = Lamp for D-type clogging indicator (LXX, XX = voltage)
 SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids
 T100 = Thermal Lockout on indicator at 100°F (contact HYDAC for B or BM type indicators)
 W = Modification of "W/HC" and "V" elements for use with oil water emulsions (HFA) and water polymer solutions (HFC)
 BFL = BF Clogging indicator on left looking into inlet.
 BFR = BF Clogging indicator on right looking into inlet.
 SFREE = Element specially designed to minimize electrostatic charge generation
 cRUus = Electrical Indicator with underwriter's recognition
 SO376 = Modification of ON and W/HC elements for HFA, HFB, HFC, and HFD flame retardant liquids
 SO882 = Quality Protection Design

Replacement Element Model Code

Size	0280	D	003	ON / V	
0035, 0055, 0160, 0240, 0280					
Filtration Rating (micron)	1, 3, 5, 10, 15, 20 = ON 3, 5, 10, 20 = BH4HC 25, 50, 100, 200 = W/HC				
Element Media	ON, BH4HC, W/HC				
Seals	(omit) = Nitrile rubber (NBR) (standard) V = Fluorocarbon elastomer (FKM) EPR = Ethylene propylene rubber (EPR)				

SFREE = (same as above)
 SO263 = (same as above)
 W = (same as above)
 SO376 = (same as above)
 SO882 = (same as above)

Clogging Indicator Model Codes

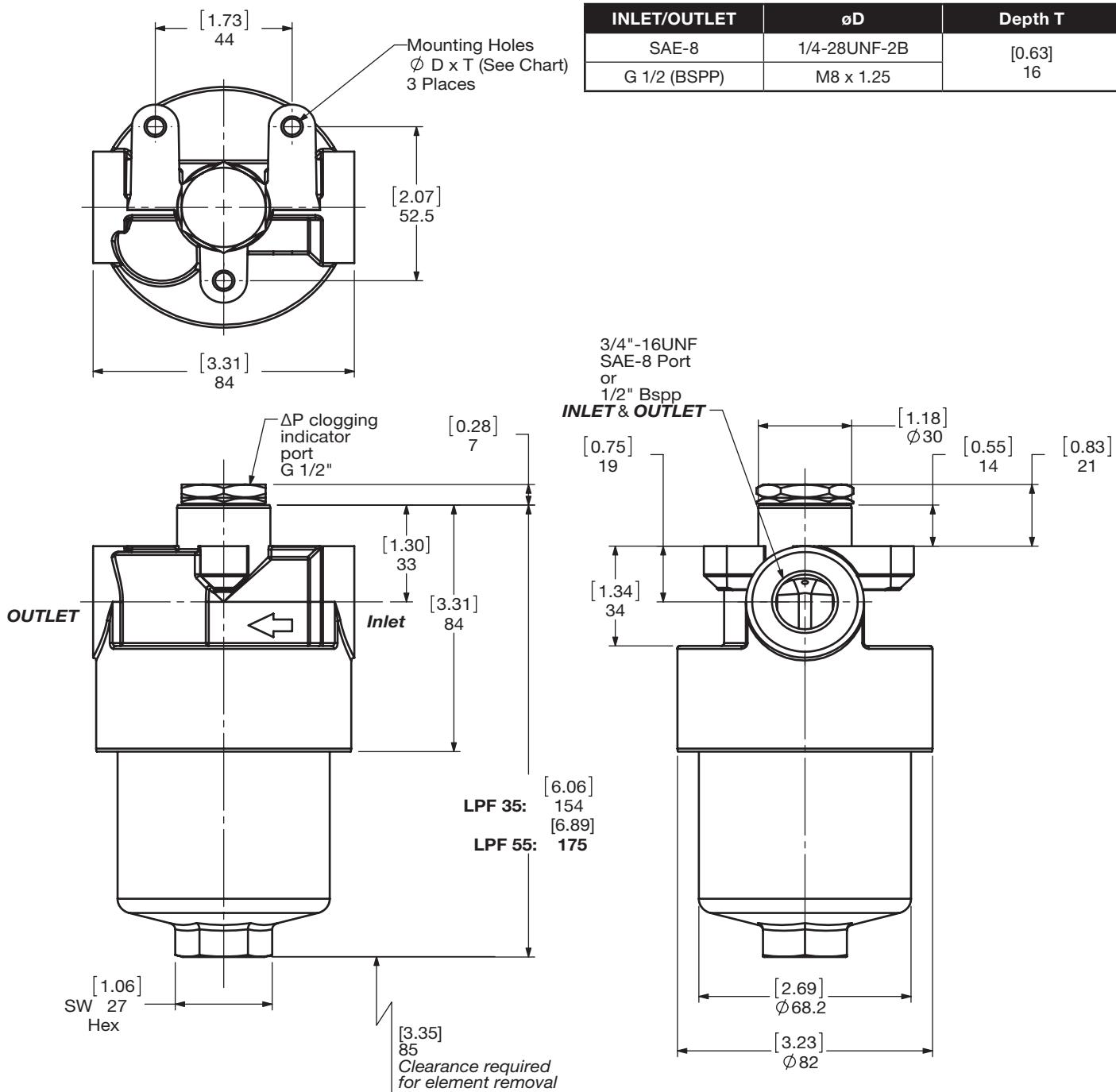
Indicator Prefix	VM	5	B . X /		
VM = G 1/2 3000 psi (sizes 35-280) VL = 580 psi (sizes 160-280) (BF only)					
Trip Pressure	2	= 29 psid (2 bar) 2.5	= 36.25 psid (2.5 bar) (BF only) 5	= 72 psid (5 bar)	
Type of Indicator	A = no indicator, plugged port B = Visual pop-up (auto reset) BM = Visual pop-up (manual reset) BF = Visual analog (sizes 160-280 only) C = Electric switch - SPDT D = Electric switch and LED light - SPDT				
Modification Number					
Supplementary Details					
Seals	(omit) = Nitrile rubber (NBR) (standard) V = Fluorocarbon elastomer (FKM) EPR = Ethylene propylene rubber (EPR)				
Light Voltage (D type indicators only)	L24 = 24V L110 = 110V				
Thermal Lockout (VM, VD types C, D, J, and J4 only)	T100 = Lockout below 100°F				
Underwriters Recognition (VM, VD types C, D, J, and J4 only)	cRUus = Electrical Indicator with underwriter's recognition				

(For additional details and options, see Clogging Indicators section.)

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

MEDIUM PRESSURE FILTERS

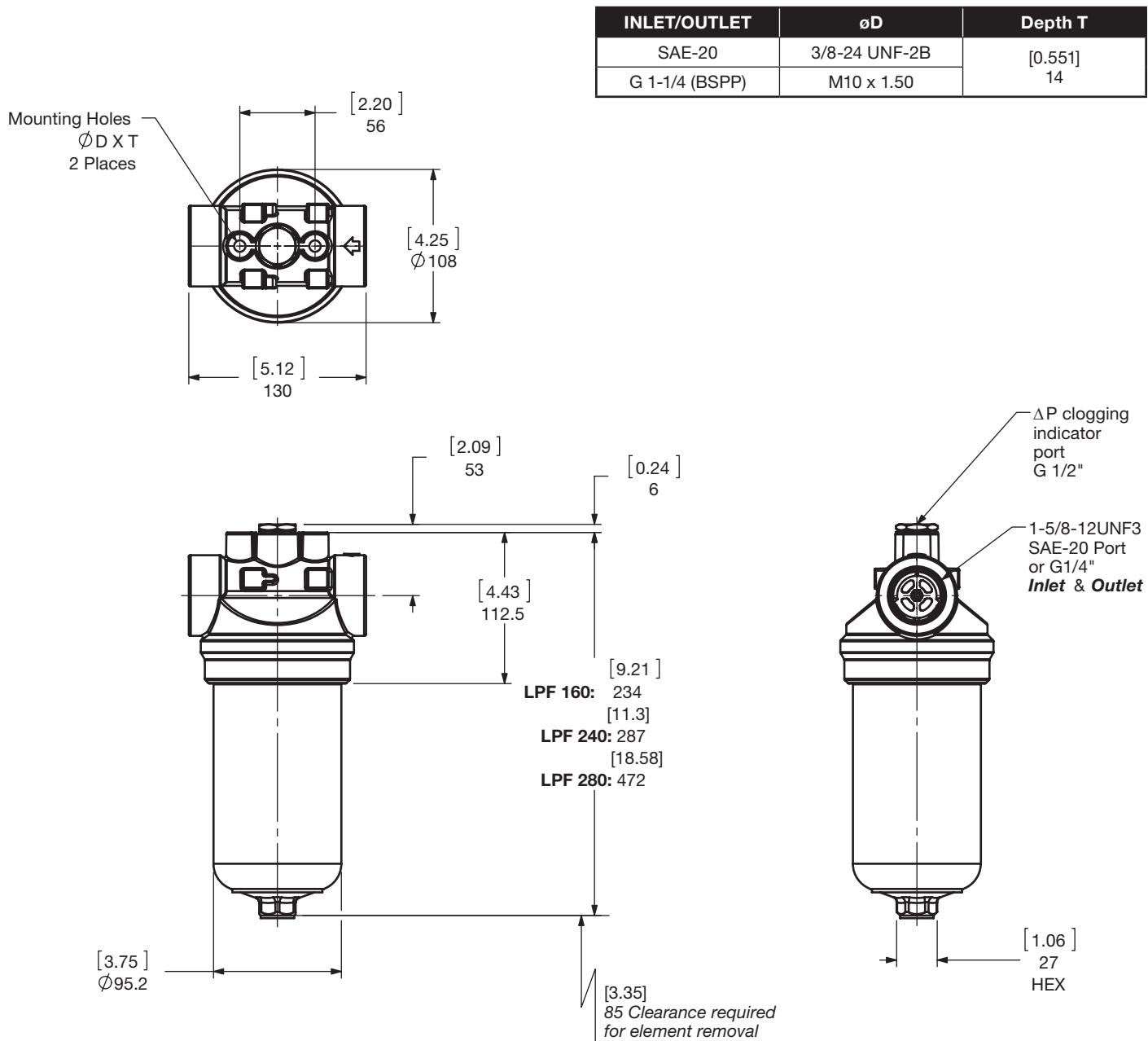
Dimensions LPF 35 / 55



Size	35	55
Weight (lbs.)	2.3	2.6

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.

Dimensions
LPF 160 / 240 / 280



Size	160	240	280
Weight (lbs.)	4.5	5.1	7.3

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.

MEDIUM PRESSURE FILTERS

Sizing Information

Total pressure loss through the filter is as follows:

Assembly ΔP = Housing ΔP + Element ΔP

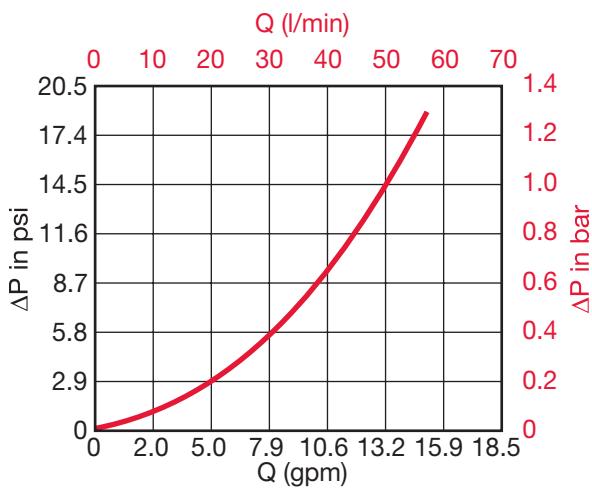
Housing Curve:

Pressure loss through housing is as follows:

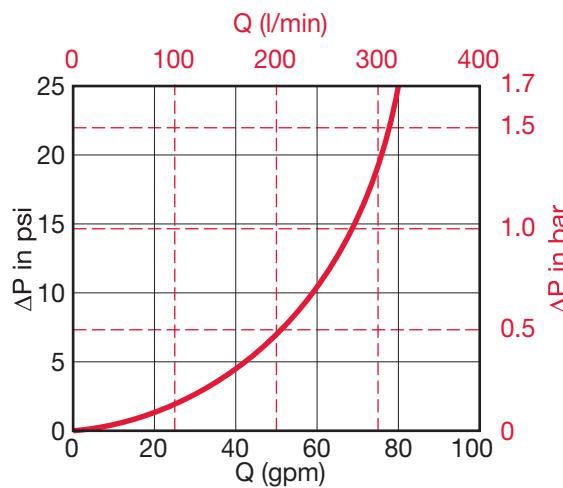
Housing ΔP = Housing Curve ΔP x $\frac{\text{Actual Specific Gravity}}{0.86}$

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

LPF 35 / 55 Housing



LPF 160 / 240 / 280 Housing



Element K Factors

ΔP Elements = Elements (K) Flow Factor x Flow Rate (gpm) x $\frac{\text{Actual Viscosity (SUS)}}{141 \text{ SUS}} \times \frac{\text{Actual Specific Gravity}}{0.86}$
(From Tables Below)

"ON" Pressure Elements	...D...ON (Optimicron Pressure Elements)					
	1 μm	3 μm	5 μm	10 μm	15 μm	20 μm
0035 D XXX ON	2.755	1.169	0.938	0.752	0.549	0.408
0055 D XXX ON	1.427	0.675	0.543	0.434	0.284	0.211
0160 D XXX ON	1.015	0.604	0.423	0.225	0.204	0.175
0240 D XXX ON	0.631	0.379	0.293	0.175	0.134	0.115
0280 D XXX ON	0.304	0.185	0.15	0.082	0.075	0.064

"D" Pressure Elements	...D...BH4HC (Betamicron High Collapse)			
	3 μm	5 μm	10 μm	20 μm
0035 D XXX BH4HC	2.623	1.542	0.922	0.576
0055 D XXX BH4HC	1.328	0.779	0.466	0.291
0160 D XXX BH4HC	0.922	0.571	0.324	0.241
0240 D XXX BH4HC	0.582	0.373	0.214	0.159
0280 D XXX BH4HC	0.313	0.187	0.099	0.088

Wire Mesh	...D...W/HC Elements (Low Collapse)			
	...D...W/HC Elements 25, 50, 100, 200 μm			
0160 D XXX W/HC		0.016		
0240 D XXX W/HC		0.010		
0280 D XXX W/HC		0.005		

All Element K Factors in psi / gpm.

Notes

