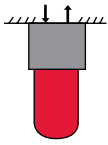


HIGH PRESSURE FILTERS

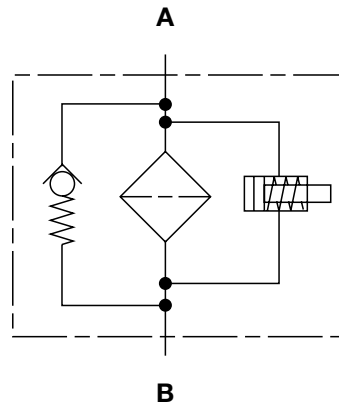
DFP Series

Manifold Mount Filters

4568 psi • up to 125 gpm



Hydraulic Symbol



Features

- The filter housings are designed to withstand pressure surges as well as high static pressure loads.
- The screw-in bowl or lid/cap allows the filter element to be easily removed for replacement or cleaning.
- A visual (pop-up), electrical, electrical/visual (lamp), or electronic differential type clogging indicator can be installed.
- DFP filters are available with or without a bypass valve (located in filter head) so either high or low collapse pressure elements may be used.
- Multiple indicator port locations (DFP330/660/1320 only) also allow two different types of indicators to be installed into the filter. Indicators of the same type, but with different trip pressures can also be installed. (both ports machined and plugged)
- Fatigue pressure rating equals maximum allowable working pressure rating.

Applications



Agricultural



Construction



Industrial



Power Generation



Railways



Steel / Heavy Industry

Technical Specifications

Mounting Method	<i>(manifold mount)</i>	
60 - 280	4 mounting holes	
330 - 1320	6 mounting holes	
Port Connection	Diameter	
60/110	0.689" (17.5mm)	
160/240/280	0.843" (21.4mm)	
330/660/1320	1.181" (30mm)	
Flow Direction	Inlet: Top	Outlet: Top
Construction Materials		
Head	Ductile iron	
Bowl	Steel	
Housing (660-1320)	Steel	
Cap/Lid (660-1320)	Low Carbon Steel	
Flow Capacity		
60	16 gpm (60 lpm)	
110	29 gpm (110 lpm)	
160	42 gpm (160 lpm)	
240	63 gpm (240 lpm)	
280	74 gpm (280 lpm)	
330	87 gpm (330 lpm)	
660	174 gpm (660 lpm)	
1320	180 gpm (680 lpm)	
Housing Pressure Rating		
Max. Allowable Working Pressure	4568 psi (315 bar)	
Fatigue Pressure	4568 psi (315 bar) @ 1 million cycles	
Burst Pressure	60/110	15,805 psi (1090 bar)
	160/240/280	>18,000 psi (1240 bar)
	330/660/1320	15,660 psi (1080 bar)
Element Collapse Pressure Rating		
BH4HC, V	3045 psid (210 bar)	
SN, W/HC	290 psid (17 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% (optional)		
$\Delta P = 72$ psid (5 bar) -10% (standard)		
Bypass Valve Cracking Pressure		
$\Delta P = 43$ psid (3 bar) +10% (optional)		
$\Delta P = 87$ psid (6 bar) +10% (standard)		

Model Code

Filter Type _____ **DFP** _____ **SN** _____ **60** _____ **Q** _____ **B** _____ **3** _____ **B** _____ **1** _____ **.** _____ **X** _____ **/** _____ **V** _____

DFP = Manifold mount filter

Element Media _____

SN = Sustainmicron
W/HC = Wire Mesh

V = Metal Fiber

Size and Nominal Port Dimension _____

60 = 3/4" 280 = 1"
110 = 3/4" 330 = 1 1/4"
160 = 1" 660 = 1 1/4"
240 = 1" 1320 = 1 1/4"

Operating Pressure _____

Q = 4500 psi (315 bar)

Port Size _____

B = 0.69 (sizes 60 - 110)
C = 0.84 (sizes 160 - 280)
D = 1.18 (sizes 330 - 1320)

Filtration Rating (microns) _____

3, 5, 10, 20 = BH/HC 3, 5, 10, 20 = V 25, 50, 100, 200 = W/HC 3, 5, 10, 20 = SN

Type of ΔP Clogging Indicator _____

A, B, BM, C, D (others available upon request, see Clogging Indicators section.)

Type Number _____

1 = Single piece bowl (sizes 60 - 660)
2 = Two piece bowl (size 330, 660 & 1320 only)

Modification Number (the latest version is always supplied) _____

Seals _____

(omit) = Nitrile rubber (NBR) (standard) **V** = Fluorocarbon elastomer (FKM)

Bypass Valve _____

(omit) = Without Bypass (BH4HC or V elements recommended)
B3 = 43 psid Bypass (optional)
B6 = 87 psid Bypass (standard)

Supplementary Details _____

SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids
SO184 = G-1/2 Drain in Bowl Option For Sizes 60 - 280 (standard for sizes 330, 660, & 1320)
W = "VD..." indicator modified with a brass piston for use with high water based emulsions/solutions (HFA) & (HFC)
L24, L48, L110, L220 = Lamp for D-type clogging indicator (LXX, XX = voltage)
T100 = Indicator Thermal Lockout, 100°F (C and D indicators only)
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

Replacement Element Model Code

0060 _____ **D** _____ **003** _____ **BH4HC** _____ **/** _____ **V** _____

Size _____

0060, 0110, 0160, 0240,
0280, 0330, 0660, 1320

Filtration Rating (micron) _____

3, 5, 10, 20 = BH4HC 25, 50, 100, 200 = W/HC
3, 5, 10, 20 = V 3, 5, 10, 20 = SN

Element Media _____

BH4HC, SN, **V**, W/HC

Seals _____

(omit) = Nitrile rubber (NBR) (standard)
V = Fluorocarbon elastomer (FKM)

Supplementary Details _____

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

Clogging Indicator Model Code

VD _____ **5** _____ **B** _____ **.** _____ **X** _____ **/** _____ **V** _____

Indicator Prefix _____

VD = G 1/2 6000 psi

Trip Pressure _____

2 = 29 psid (2 bar) (option)
5 = 72 psid (5 bar) (standard)
Optional 116 psid (8 bar) available upon request

Type of Indicator _____

A = No indicator, plugged port
B = Pop-up indicator (auto reset)
BM = Pop-up indicator (manual reset)
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)

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

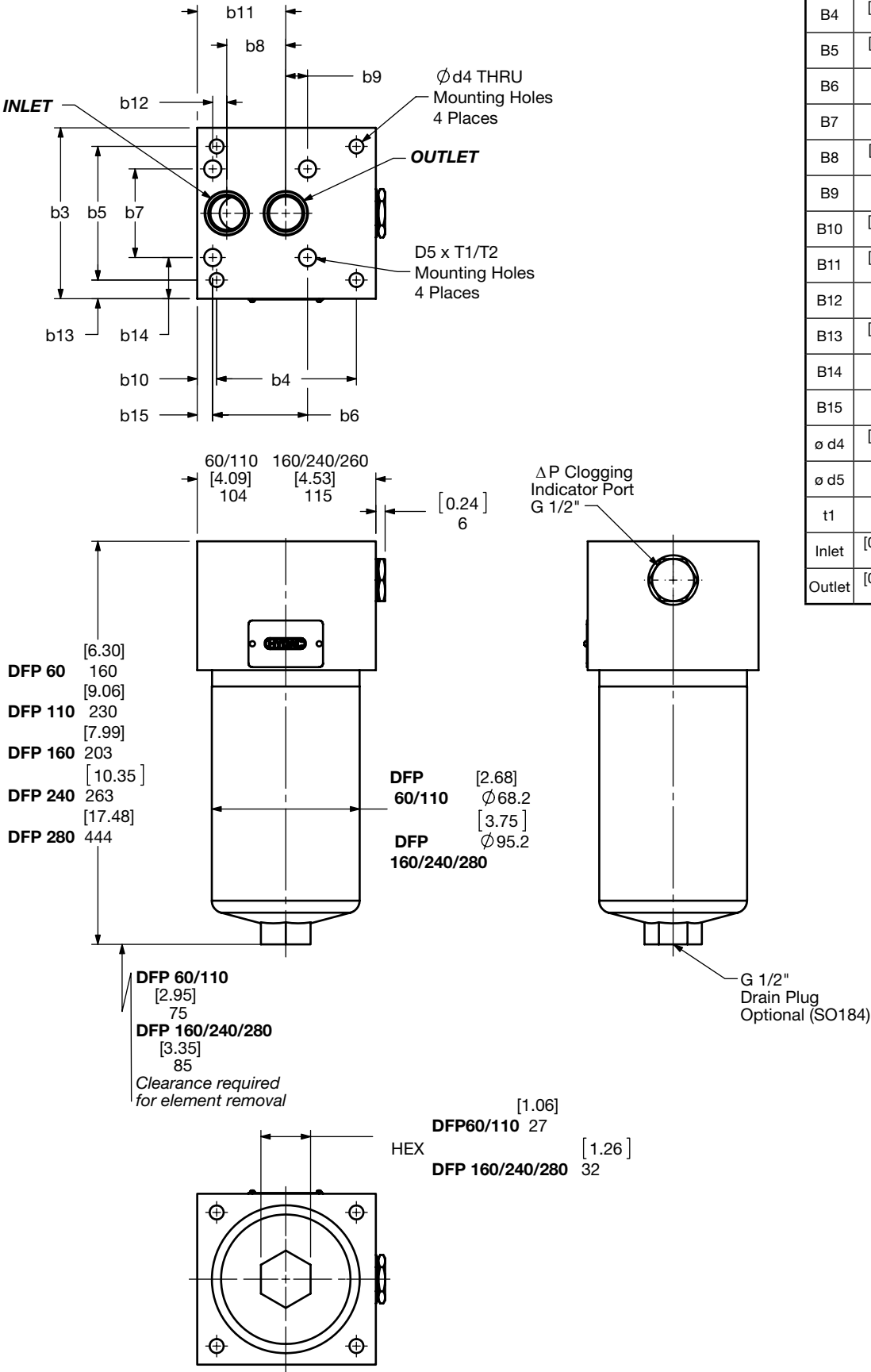
Underwriters Recognition (VM, VD types C, D, J, and J4 only) _____

cRUus = Electrical Indicator with underwriter's recognition
W = "VD..." indicator modified with a brass piston for use with high water based emulsions/solutions (HFA) & (HFC)
(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

HIGH PRESSURE FILTERS

Dimensions DFP 60 – 280...1.X

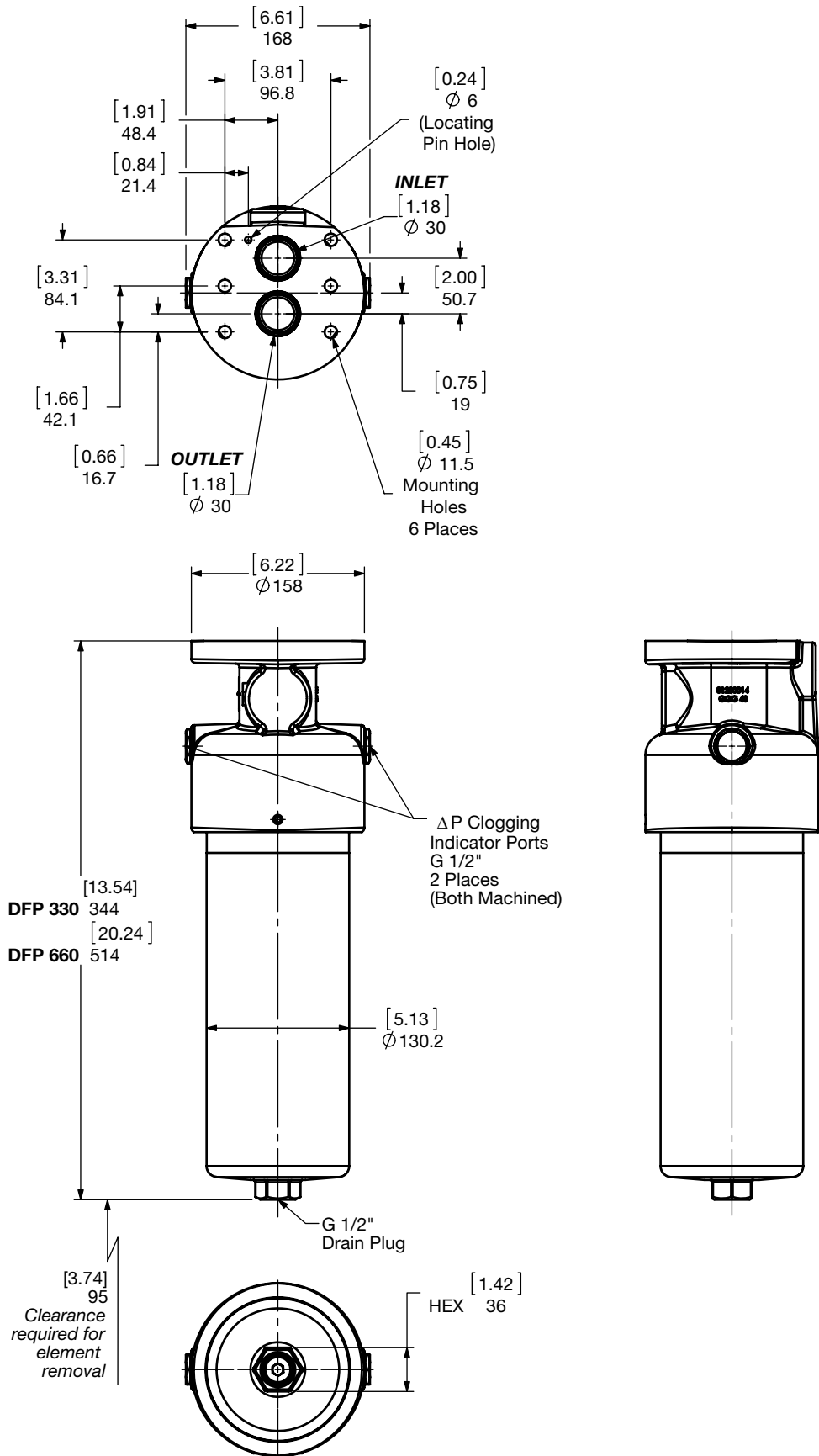


	60 / 110	160 / 240 / 280
B3	[3.15] 80	[4.33] 110
B4	[3.50] 89	[3.54] 90
B5	[1.25] 31.8	[3.39] 86
B6	-	[2.40] 61
B7	-	[2.24] 57
B8	[1.24] 31.6	[1.50] 38
B9	-	[0.55] 14
B10	[0.30] 7.5	[0.49] 12.5
B11	[2.20] 55.9	[2.26] 57.5
B12	-	[0.35] 9
B13	[0.95] 24.1	[0.47] 12
B14	-	[1.04] 26.5
B15	-	[0.41] 10.5
$\phi d4$	[0.33] 8.5	[0.35] 9
$\phi d5$	-	7/16-14UNC-2B
t1	-	[0.51] 13
Inlet	[0.639] 17.5	0.843" 21.4
Outlet	[0.689] 17.5	[0.843] 21.4

Size	60	110	160	240	280
Weight (lbs.)	11.3	13.3	20.1	23	32.5

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
DFP 330/660...1.X

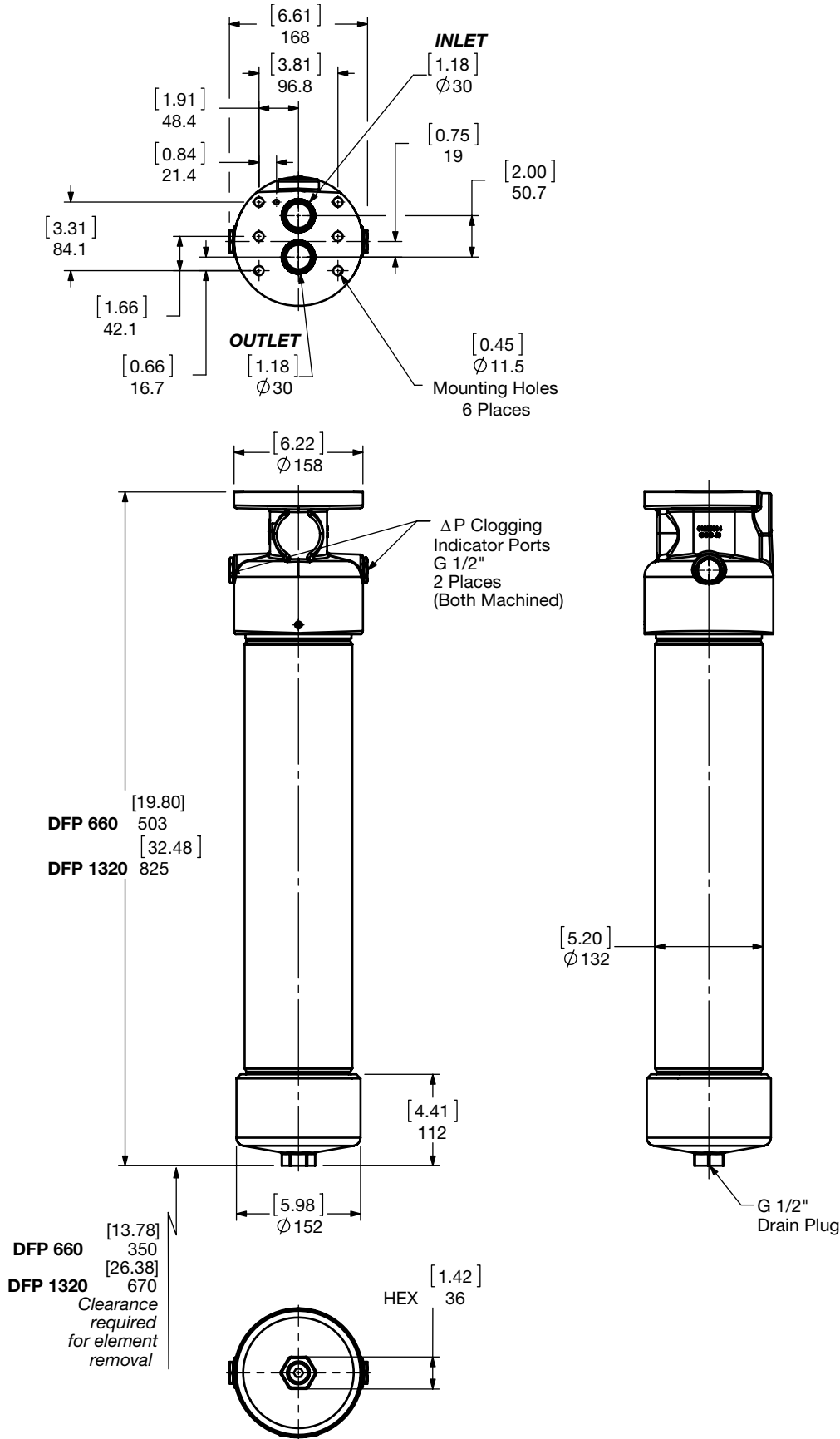


Size	330	660
Weight (lbs.)	46.3	64

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

Dimensions
DFP 660 & 1320...2.X



Size	660	1320
Weight (lbs.)	64	103.9

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:

Assembly ΔP = Housing ΔP + Element ΔP

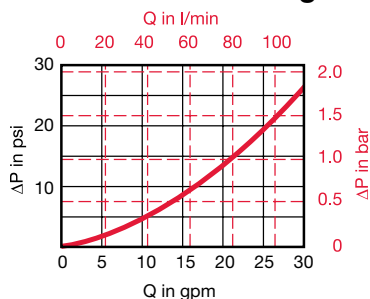
Housing Curve:

Pressure loss through housing is as follows:

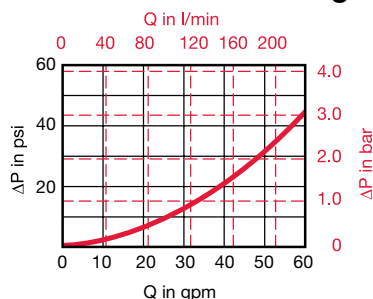
Housing ΔP = Housing Curve ΔP x $\frac{\text{Actual Specific Gravity}}{0.86}$

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

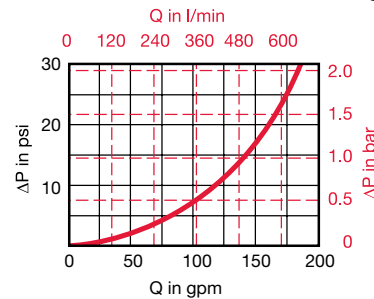
DFP 60/110 Housing



DFP 160/240/280 Housing



DFP 330/660/1320 Housing



Element K Factors

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

Sustainmicron	...D...SN Elements			
Size	3 μm	5 μm	10 μm	20 μm
0060 D XXX SN	1.314	0.905	0.565	0.304
0110 D XXX SN	0.622	0.475	0.283	0.144
0160 D XXX SN	0.434	0.381	0.176	0.153
0240 D XXX SN	0.276	0.235	0.146	0.104
0280 D XXX SN	0.141	0.120	0.064	0.059
0330 D XXX SN	0.192	0.167	0.108	0.057
0660 D XXX SN	0.088	0.077	0.041	0.026
1320 D XXX SN	0.043	0.038	0.020	0.013

Betamicon	...D...BH4HC Elements (High Collapse)			
Size	3 μm	5 μm	10 μm	20 μm
0060 D XXX BH4HC	3.216	1.789	0.993	0.670
0110 D XXX BH4HC	1.394	0.818	0.489	0.307
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
0330 D XXX BH4HC	0.423	0.247	0.154	0.110
0660 D XXX BH4HC	0.181	0.104	0.055	0.049
1320 D XXX BH4HC	0.088	0.055	0.033	0.022

Wire Mesh	...D...W/HC Elements (Low Collapse)			
Size	25, 50, 100, 200 μm			
0060 D XXX W/HC	0.042			
0110 D XXX W/HC	0.023			
0160 D XXX W/HC	0.016			
0240 D XXX W/HC	0.010			
0280 D XXX W/HC	0.005			
0330 D XXX W/HC	0.008			
0660 D XXX W/HC	0.004			
1320 D XXX W/HC	0.002			

Metal Fiber	...D...V Elements (High Collapse)			
Size	3 μm	5 μm	10 μm	20 μm
0060 D XXX V	0.877	0.511	0.296	0.183
0110 D XXX V	0.452	0.304	0.182	0.118
0160 D XXX V	0.251	0.177	0.123	0.079
0240 D XXX V	0.169	0.137	0.093	0.062
0280 D XXX V	0.126	0.093	0.064	0.041
0330 D XXX V	0.121	0.097	0.065	0.043
0660 D XXX V	0.063	0.050	0.034	0.021
1320 D XXX V	0.032	0.026	0.018	0.012

All Element K Factors in psi / gpm.