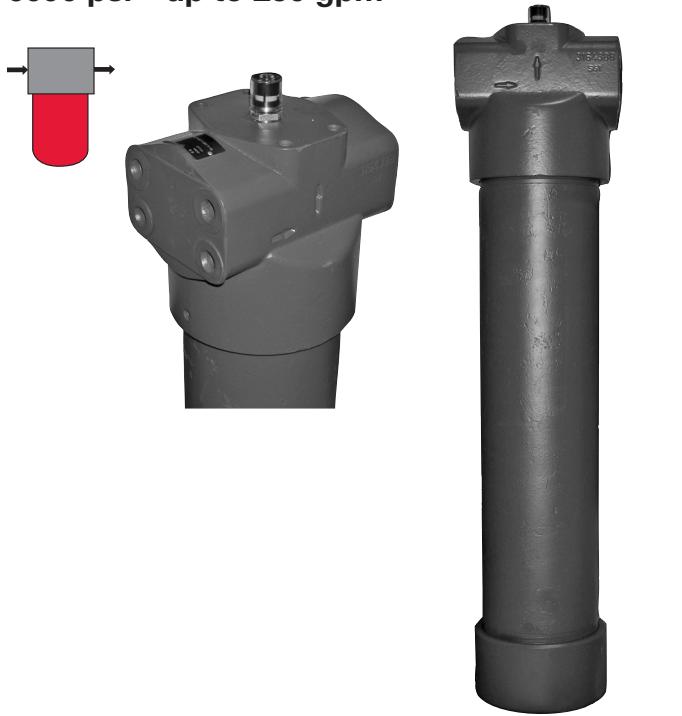


# HIGH PRESSURE FILTERS

## DF/DFF 1500 Series

### Inline Filters

6090 psi • up to 250 gpm



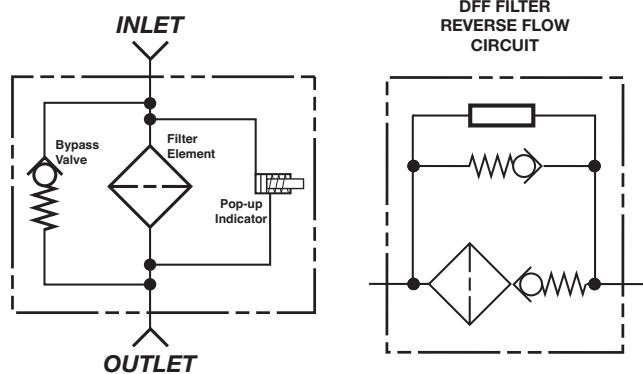
### Features

- Available in T ported or L ported configurations
- Handles high flows to 250 GPM (pricing competitive)
- Available in bidirectional flow and single flow configurations
- Two part bowl for ease of operation and element change-out
- Filter head made of ductile iron
- Filter housing (bowl) and lid made of steel
- Can mount head on top with bottom access (2.x) or head on bottom with top access (3.x)
- Single flow version (DF) can be supplied with bypass (located in head assembly).
- Bidirectional flow version (DFF) can only be supplied with no-bypass.

### Applications



### Hydraulic Symbol



### Technical Specifications

<b>Mounting Method</b>	4 Mounting holes in the filter head - M-12 Threads
<b>Port Connection</b>	SAE-32 four bolt code 62 Flange (DN 51) with metric bolt threads (M20 x 30mm deep) 2" SAE 32 straight thread O-Ring Boss / 2" BSPP thread
<b>Flow Direction</b>	Side inlet and outlet - Indicator on top Side inlet and top outlet - Indicator on side
<b>Construction Materials</b>	Head: Ductile Iron (GGG40) Filter housing (bowl) & lid: Steel
<b>Flow Capacity</b>	250 gpm (950 lpm)
<b>Housing Pressure Rating</b>	Max. Allowable Working Pressure 6090 psi (420 bar) Fatigue Pressure 6090 psi (420 bar) @ 300,000 cycles Burst Pressure Contact HYDAC
<b>Element Collapse Pressure Rating</b>	ON, W/HC 290 psid (20 bar) BH4HC, V 3045 psid (210 bar)
<b>Fluid Temperature 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% $\Delta P = 72$ psid (5 bar) -10% $\Delta P = 116$ psid (8 bar) -10% (non-bypass)
<b>Bypass Valve Cracking Pressure</b>	$\Delta P = 43$ psid (3 bar) +10% $\Delta P = 87$ psid (6 bar) +10% Non Bypass Available

## Model Code

<b>Filter Type</b>	<u>DF</u>	<u>BH/HC</u>	<u>1500</u>	<u>T</u>	<u>G</u>	<u>10</u>	<u>B</u>	<u>2</u>	<u>X</u>	<u>/</u>	<u>12</u>	<u>V</u>
DF = Inline filter	DFF = Inline filter - Reverse flow											
<b>Element Media</b>												
ON = Optimicron®	BH/HC = Betamicron® (High Collapse) (required on DFF)											
W/HC = Wire Mesh	V = Metal Fiber											
<b>Size and Nominal Connection</b>												
1500 = 2" BSPP / SAE 32 Straight Thread / 2" SAE DN 51 Flange												
<b>Pressure</b>												
T = 6090 psi / 420 bar												
<b>Type of Head</b>												
(omit) = T Port	L = L Port											
<b>Type of Connection</b>												
G = 2" Threaded	L = 2" Flanged SAE DN 51 Code 62											
<b>Filtration Rating (microns)</b>												
1, 3, 5, 10, 15, 20 = ON	3, 5, 10, 20 = BH/HC											
25, 50, 100, 200 = W/HC	3, 5, 10, 20 = V											
<b>Type of ΔP Clogging Indicator</b>												
A, B, BM, C, D (Others available upon request, see Clogging Indicators section.)												
<b>Type Number</b>												
2 = Standard Mounting - Bottom Accessible (two-piece bowl)												
3 = Upside Down Mounting w/o Drain Port in Head (two-piece bowl) - (cust. to supply low point drain external to filter)												
<b>Modification Number</b> (latest version always supplied)												
<b>Port Configuration</b>												
(omit) = 2" SAE DN 51 Flange Ports (metric bolt threads M20)	0 = 2" BSPP	12 = 2" SAE Straight Thread O-Ring Boss Ports										
<b>Seals</b>												
(omit) = Nitrile rubber (NBR) (standard)	V = Fluorocarbon elastomer (FKM)	EPR = Ethylene propylene rubber (EPR)										
<b>Bypass Valve</b>												
(omit) = Without Bypass (BH4HC or "V" High Collapse elements recommended)												
B3 = 43 psid Bypass (optional)	No bypass on DFF 1500											
B6 = 87 psid Bypass (standard)												
<b>Supplementary Details</b>												
SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids												
W = "VD..." indicator modified with a brass piston for use with High water based emulsions/solutions (HFA) & (HFC) or when using "V" elements												
L24, L48, L110, L220 = Lamp for D-type clogging indicator (LXX, XX = voltage)												
T100 = Indicator Thermal Lockout, 100°F (C and D indicators only)												
cRUus = Electrical Indicators with underwriter's recognition												
SFREE = Element specially designed to minimize electrostatic charge generation												
SO376 = Modification of ON and W/HC elements for HFA, HFB, HFC, and HFD flame retardant liquids												

## Replacement Element Model Code

<b>Size</b>	<u>1500</u>	<u>D</u>	<u>010</u>	<u>BH4HC</u>	<u>/</u>	<u>V</u>
1500						
<b>Filtration Rating (micron)</b>						
1, 3, 5, 10, 15, 20 = ON	3, 5, 10, 20 = BH4HC					
25, 50, 100, 200 = W/HC	3, 5, 10, 20 = V					
<b>Element Media</b>						
ON, BH4HC, W/HC, V						
<b>Seals</b>						
(omit) = Nitrile rubber (NBR) (standard)						
V = Fluorocarbon elastomer (FKM)						
EPR = Ethylene propylene rubber (EPR)						

## Supplementary Details

- SO263 = (same as above)  
 W = Modification of "V" elements for use with oil water emulsions (HFA) and water polymer solutions (HFC) usually polyglycol  
 SFREE = (same as above)  
 SO376 = (same as above)

## Clogging Indicator Model Code

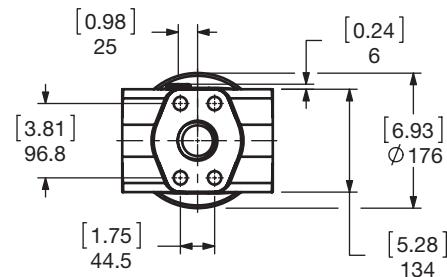
<b>Indicator Prefix</b>	<u>VD</u>	<u>5</u>	<u>B</u>	<u>.</u>	<u>X</u>	<u>/</u>	<u>V</u>
VD = G 1/2 6000 psi							
<b>Trip Pressure</b>							
2 = 29 psid (2 bar) (option)							
5 = 72 psid (5 bar) (standard)							
Optional 15 psid (1 bar) & 116 psid (8 bar) available upon request							
<b>Type of Indicator</b>							
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							
<b>Modification Number</b>							
<b>Supplementary Details</b>							
Seals							
(omit) = Nitrile rubber (NBR) (standard)							
V = Fluorocarbon elastomer (FKM)							
EP = Ethylene propylene rubber (EPR)							
<b>Light Voltage</b> (D type indicators only)							
L24 = 24V	L110 = 110V						
<b>Thermal Lockout</b> (VM, VD types C, D, J, and J4 only)							
T100 = Lockout below 100°F							
<b>Underwriters Recognition</b> (VM, VD types C, D, J, and J4 only)							
cRUus = Electrical Indicators 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

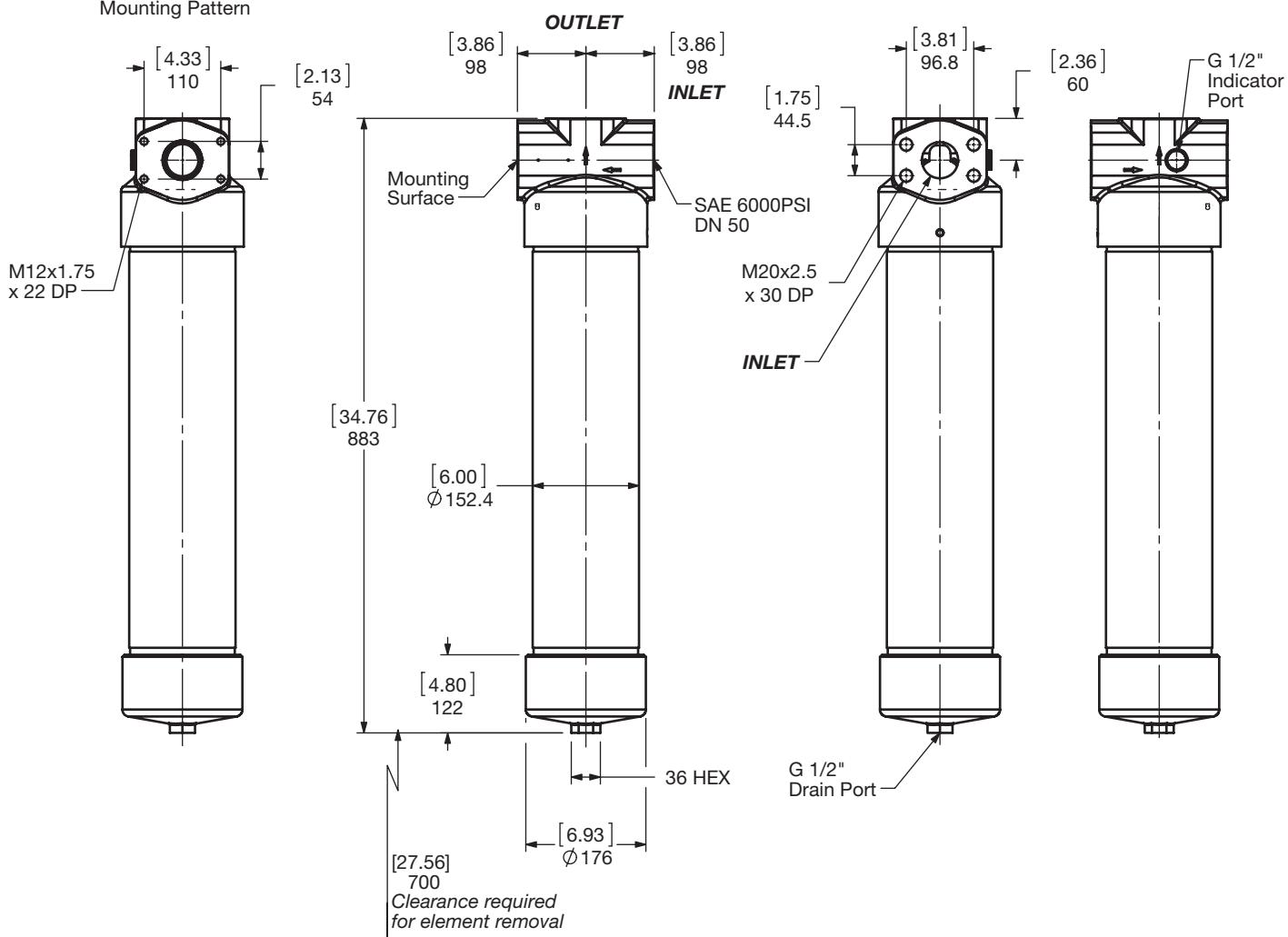
# HIGH PRESSURE FILTERS

## Dimensions

### DF/DFF 1500 2.0 L Configuration



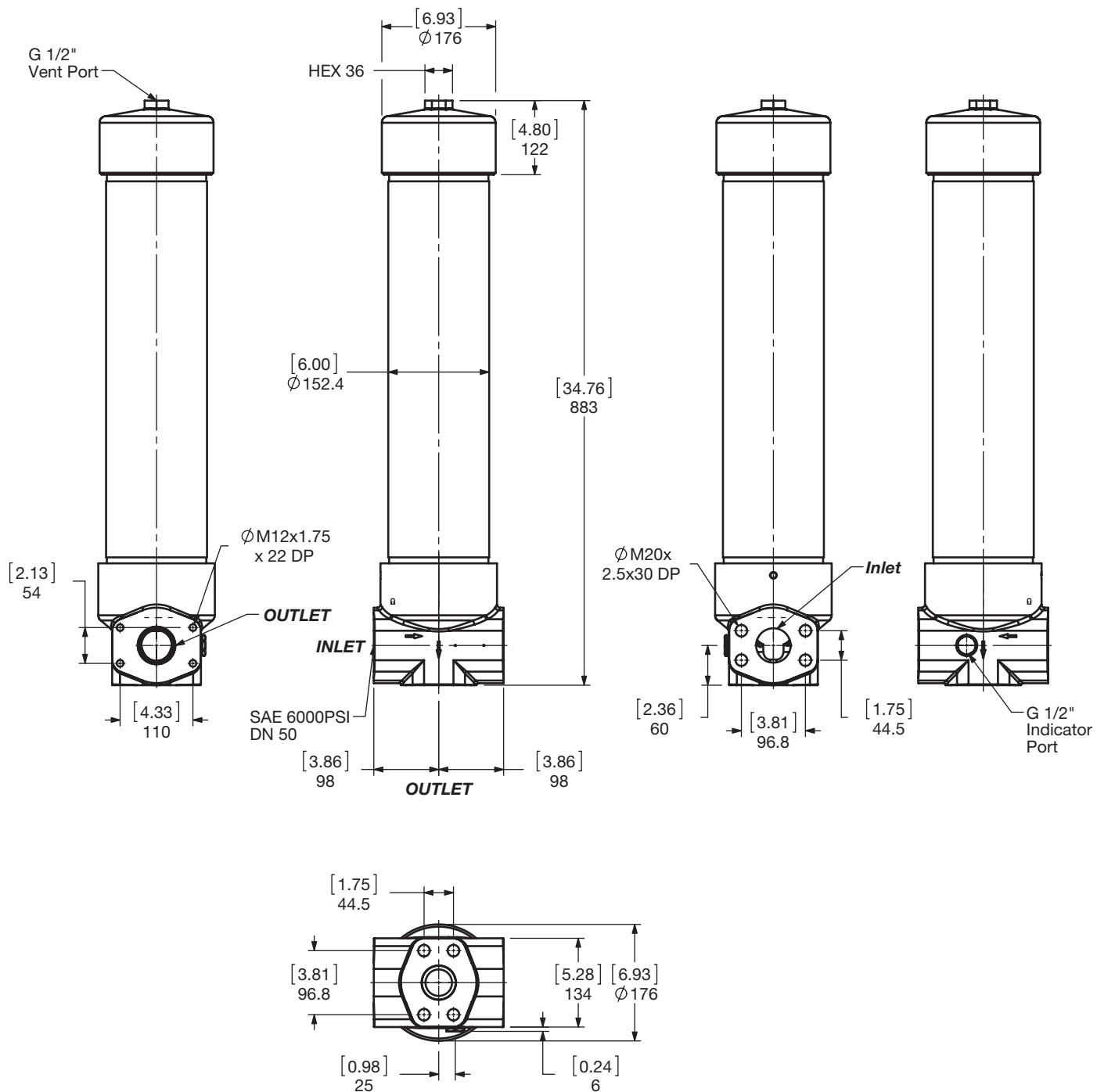
Mounting Pattern



Size	DF/DFF 1500 2.0 "L"
Weight (lbs.)	152.8

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**  
**DF/DFF 1500 3.0 L Configuration**



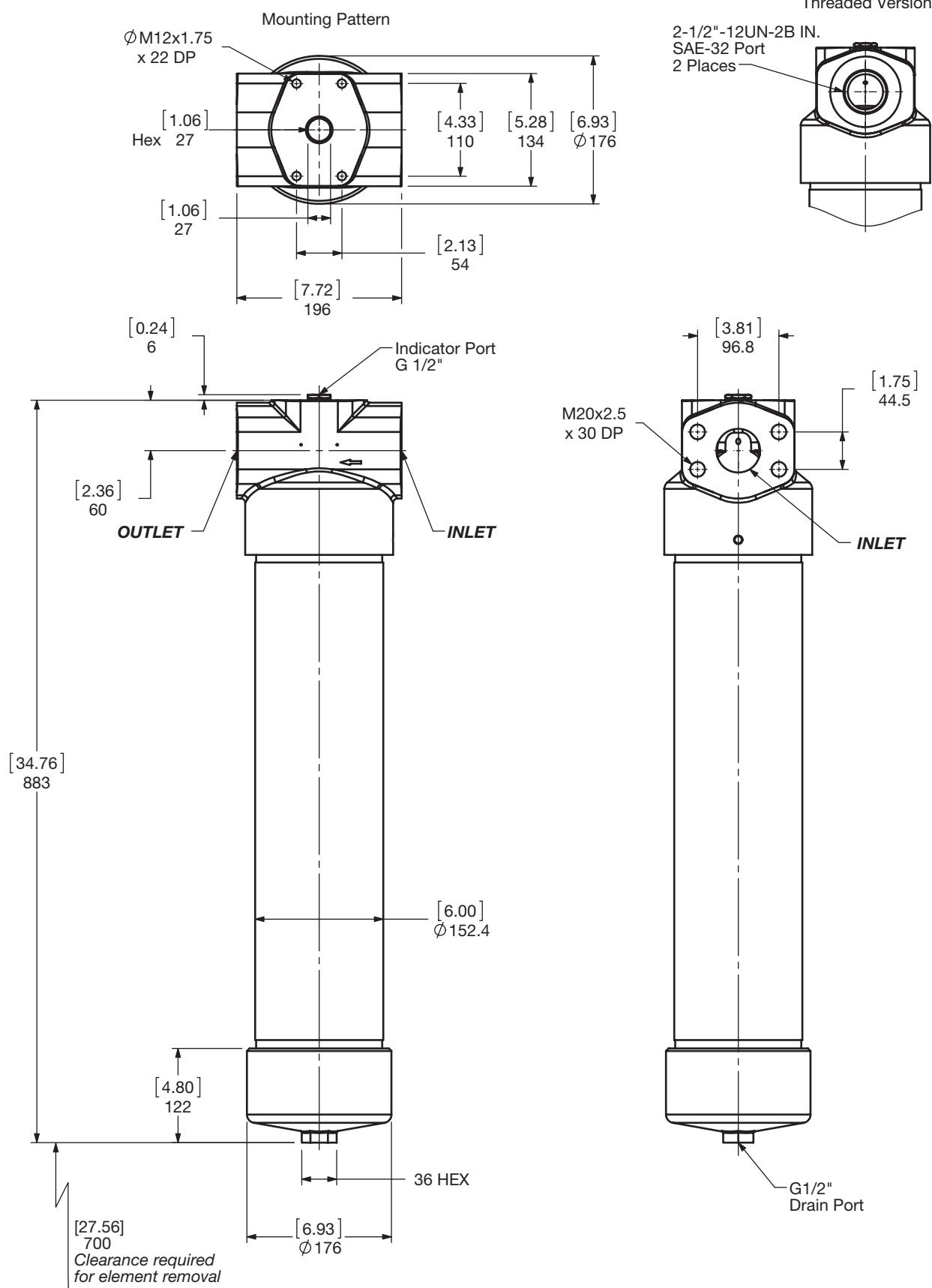
Size	DF/DFF 1500 3.0 "L"
Weight (lbs.)	152.6

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

## Dimensions

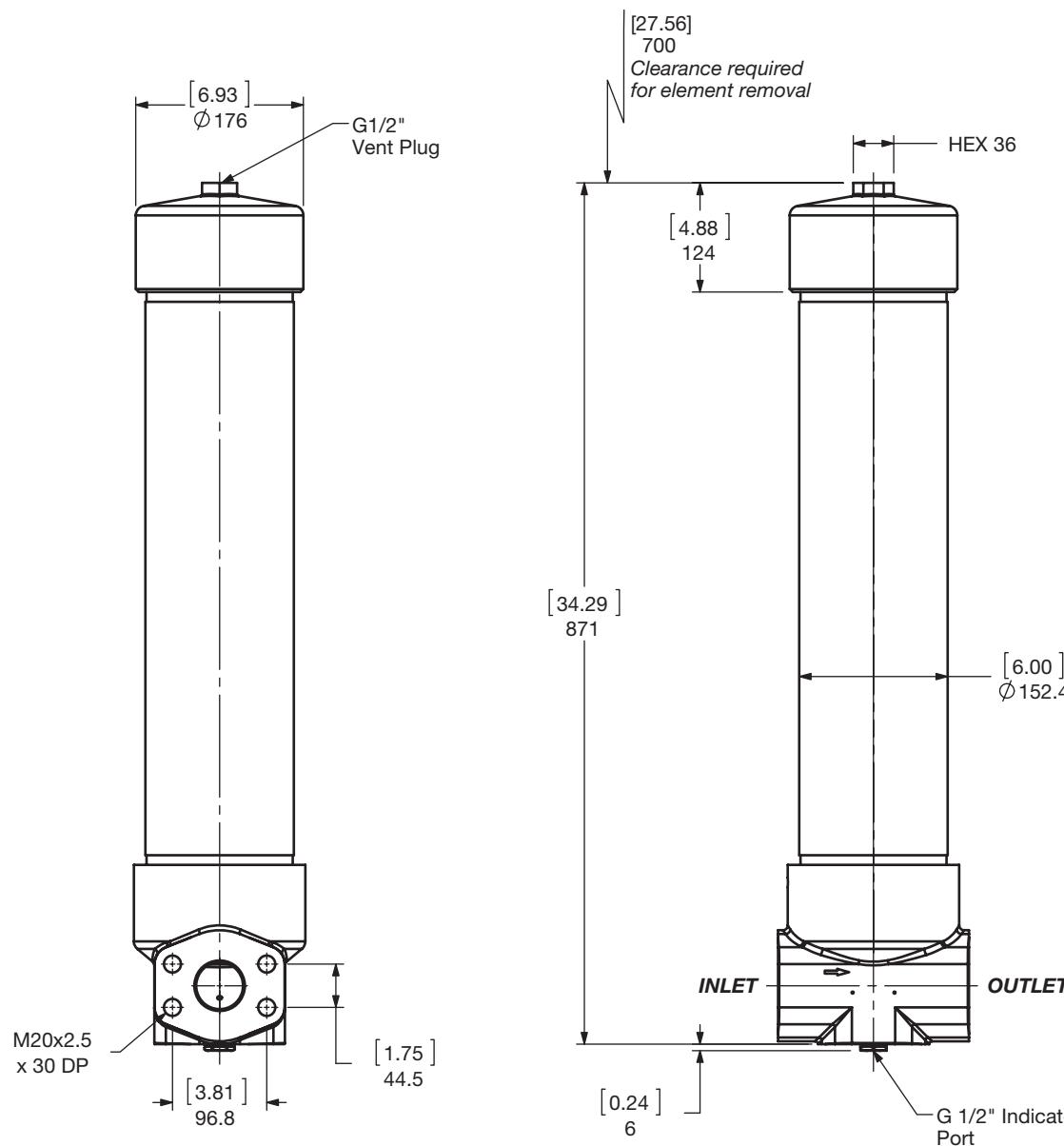
### DF/DFF 1500 2.0 T Configuration



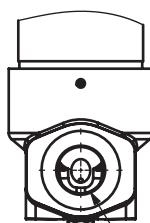
Size	DF/DFF 1500 2.0 "T"
Weight (lbs.)	152.8

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.

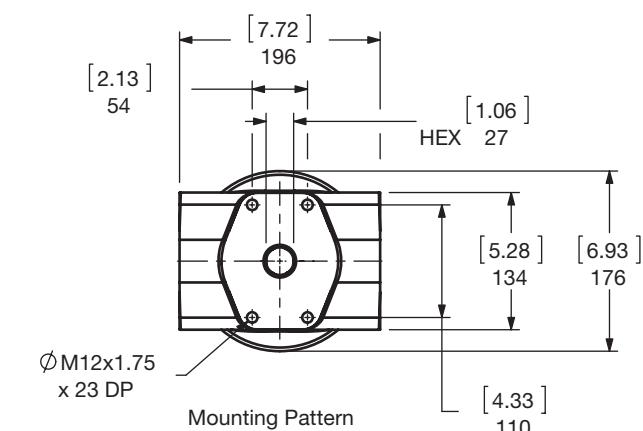
## Dimensions DF/DFF 1500 3.0 T Configuration



### Threaded Version



— 2-1/2"-12UN-2B IN.  
SAE 32 Port  
2 Places



<b>Size</b>	<b>DF/DFF 1500 3.0 "T"</b>
<b>Weight (lbs.)</b>	152.6

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:

Assembly  $\Delta P$  = Housing  $\Delta P$  + Element  $\Delta P$

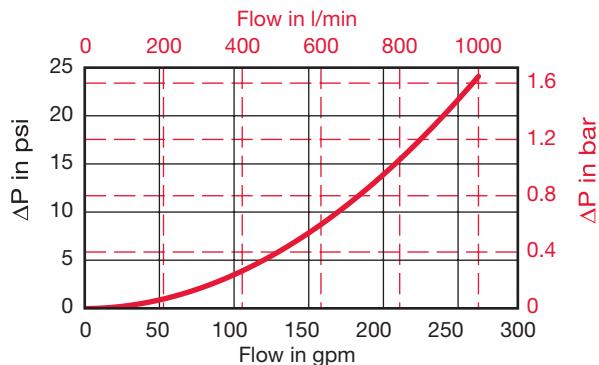
### Housing Curve:

Pressure loss through housing is as follows:

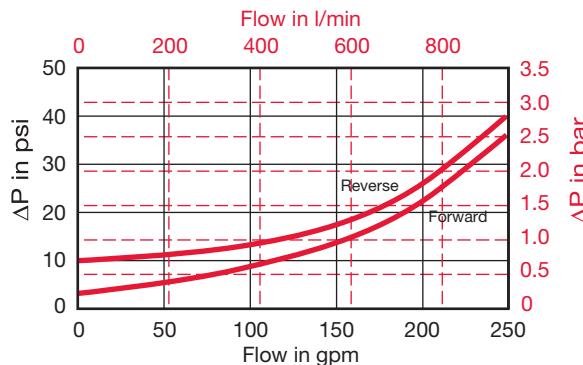
$$\text{Housing } \Delta P = \text{Housing Curve } \Delta P \times \frac{\text{Actual Specific Gravity}}{0.86}$$

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

### DF 1500



### DFF 1500



## Element K Factors

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

Optimicron		...D...ON (Pressure Elements)					
Size	1 $\mu\text{m}$	3 $\mu\text{m}$	5 $\mu\text{m}$	10 $\mu\text{m}$	15 $\mu\text{m}$	20 $\mu\text{m}$	
1500 D XXX ON	0.09	0.053	0.038	0.026	0.02	0.015	

Betamicron		...D...BH4HC (High Collapse)			
Size	3 $\mu\text{m}$	5 $\mu\text{m}$	10 $\mu\text{m}$	20 $\mu\text{m}$	
1500 D XXX BH4HC	0.077	0.044	0.033	0.027	

Wire Mesh		...D...W/HC Elements			
Size	3 $\mu\text{m}$	5 $\mu\text{m}$	10 $\mu\text{m}$	20 $\mu\text{m}$	
1500 D XXX W/HC			0.001		

Metal Fiber		...D...V Elements (High Collapse)			
Size	3 $\mu\text{m}$	5 $\mu\text{m}$	10 $\mu\text{m}$	20 $\mu\text{m}$	
1500 D XXX V	0.016	0.011	0.011	0.005	

All Element K Factors in psi / gpm.

## Notes

