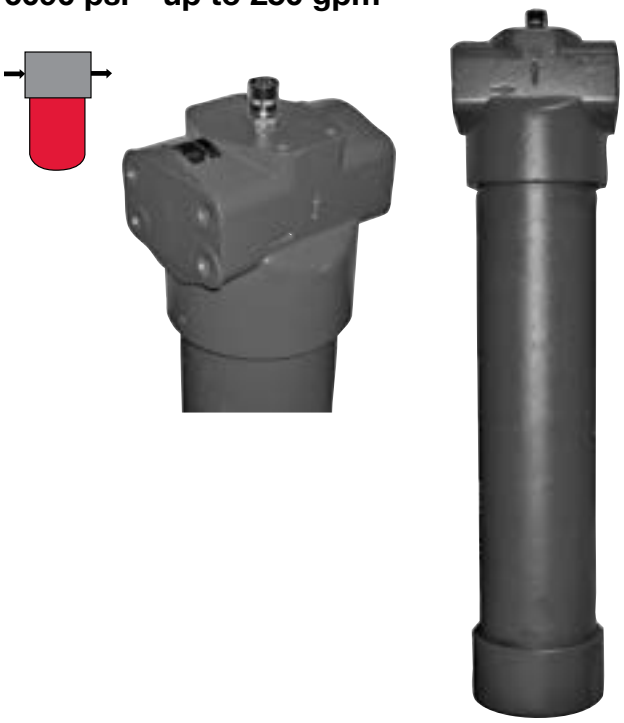
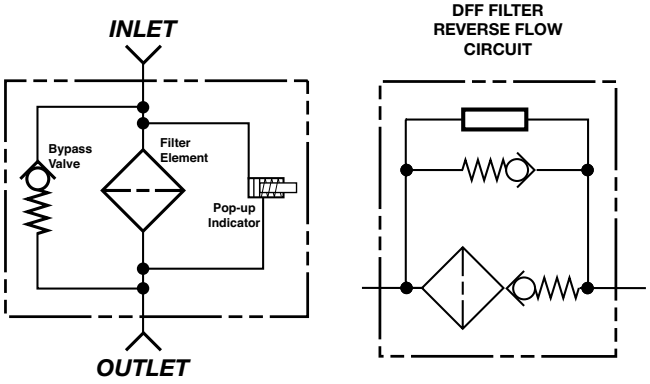
DF/DFF 1500 Series

Inline Filters

6090 psi • up to 250 gpm



Hydraulic Symbol



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

Technical Specifications

Mounting Method	4 Mounting holes in the filter head - M-12 Threads
Port Connection	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
Flow Direction	Side inlet and outlet - Indicator on top Side inlet and top outlet - Indicator on side
Construction Materials	Head: Ductile Iron (GGG40) Filter housing (bowl) & lid: Steel
Flow Capacity	250 gpm (950 lpm)
Housing Pressure Rating	
Max. Allowable Working Pressure	6090 psid (420 bar)
Fatigue Pressure	6090 psid (420 bar) @ 300,000 cycles
Burst Pressure	Contact HYDAC
Element Collapse Pressure Rating	
ON, W/HC	290 psid (20 bar)
BH4HC, V	3045 psid (210 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	
ΔP = 29 psid (2 bar) -10%	
ΔP = 72 psid (5 bar) -10%	
ΔP = 116 psid (8 bar) -10% *(non-bypass)*	
Bypass Valve Cracking Pressure	
ΔP = 43 psid (3 bar) +10%	
ΔP = 87 psid (6 bar) +10%	
Non Bypass Available	

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Model Code

DF BH/HC 1500 T G 10 B 2 . X / 12 V

Filter Type
DF = Inline filter DFF = Inline filter - Reverse flow

Element Media
ON = Optimicron®
W/HC = Wire Mesh
BH/HC = Betamicron® *(High Collapse) (required on DFF)*
V = Metal Fiber

Size and Nominal Connection
1500 = 2" BSPP / SAE 32 Straight Thread / 2" SAE DN 51 Flange

Pressure
T = 6090 psi / 420 bar

Type of Head
(omit) = T Port
L = L Port

Type of Connection
G = 2" Threaded
L = 2" Flanged SAE DN 51 Code 62

Filtration Rating *(microns)*
1, 3, 5, 10, 15, 20 = ON
25, 50, 100, 200 = W/HC
3, 5, 10, 20 = BH/HC
3, 5, 10, 20 = V

Type of ΔP Clogging Indicator
A, B, BM, C, D *(others available upon request)*

Type Number
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)*

Modification Number *(latest version always supplied)*

Port Configuration
(omit) = 2" SAE DN 51 Flange Ports *(metric bolt threads M20)*
0 = 2" BSPP
12 = 2" SAE Straight Thread O-Ring Boss Ports

Seals
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)
EPR = Ethylene propylene rubber (EPR)

Bypass Valve
(omit) = Without Bypass *(BH4HC or "V" High Collapse elements recommended))*
B3 = 43 psid Bypass *(optional)*
B6 = 87 psid Bypass *(standard)*
No bypass on DFF 1500

Supplementary Details
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

Replacement Element Model Code

1500 D 010 BH4HC / V

Size
1500

Filtration Rating *(micron)*
1, 3, 5, 10, 15, 20 = ON
25, 50, 100, 200 = W/HC
3, 5, 10, 20 = BH4HC
3, 5, 10, 20 = V

Element Media
ON, BH4HC, W/HC, V

Seals
(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 (usually polyglycol) solutions (HFC)
SFREE = *(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 15 psid (1 bar) & 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)
EP = 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

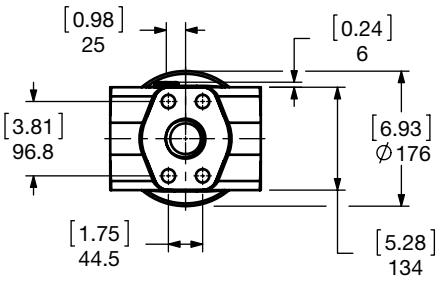
Underwriters Recognition *(VM, VD types C, D, J, and J4 only)*
cRUus = Electrical Indicators with underwriter's recognition

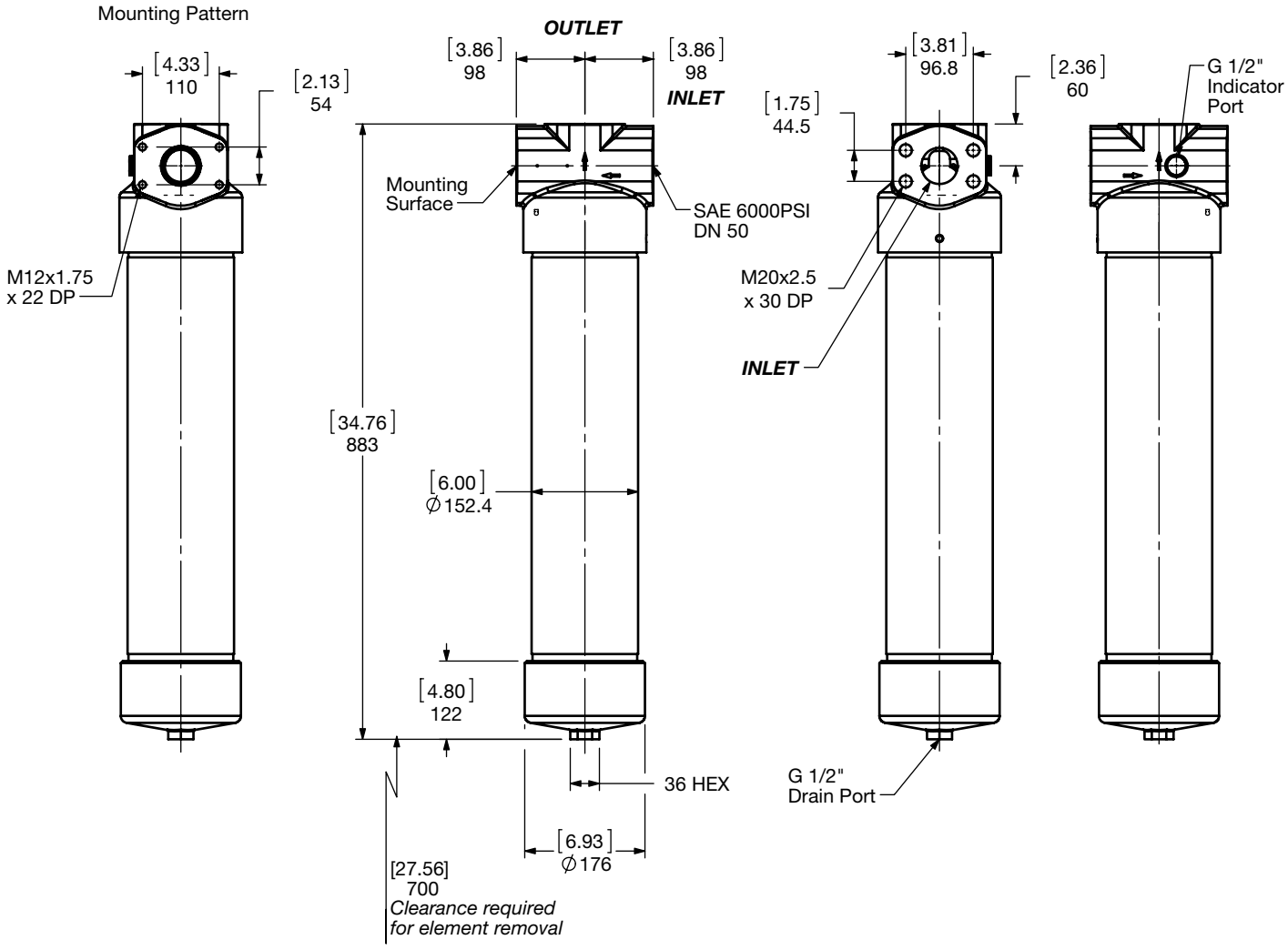
W = "VD…" indicator modified with a brass piston for use with High water based emulsions/solutions (HFA) & (HFC)

(*For additional details and options, see Section H - Clogging Indicators.*)

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

Dimensions
DF/DFF 1500 2.0 L Configuration

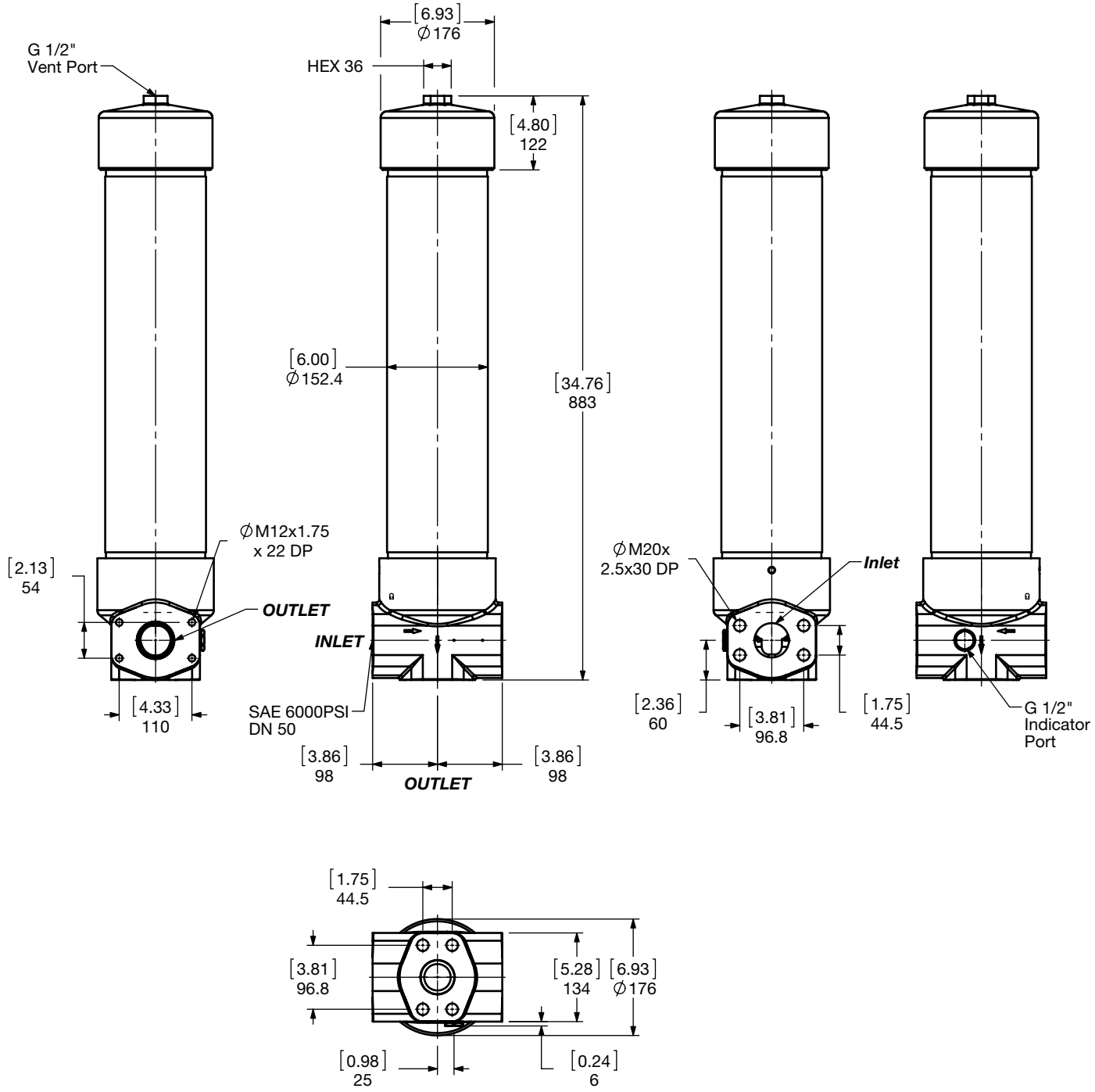




Size	DF/DFF 1500 2.0 “L”
Weight (lbs.)	152.8

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.

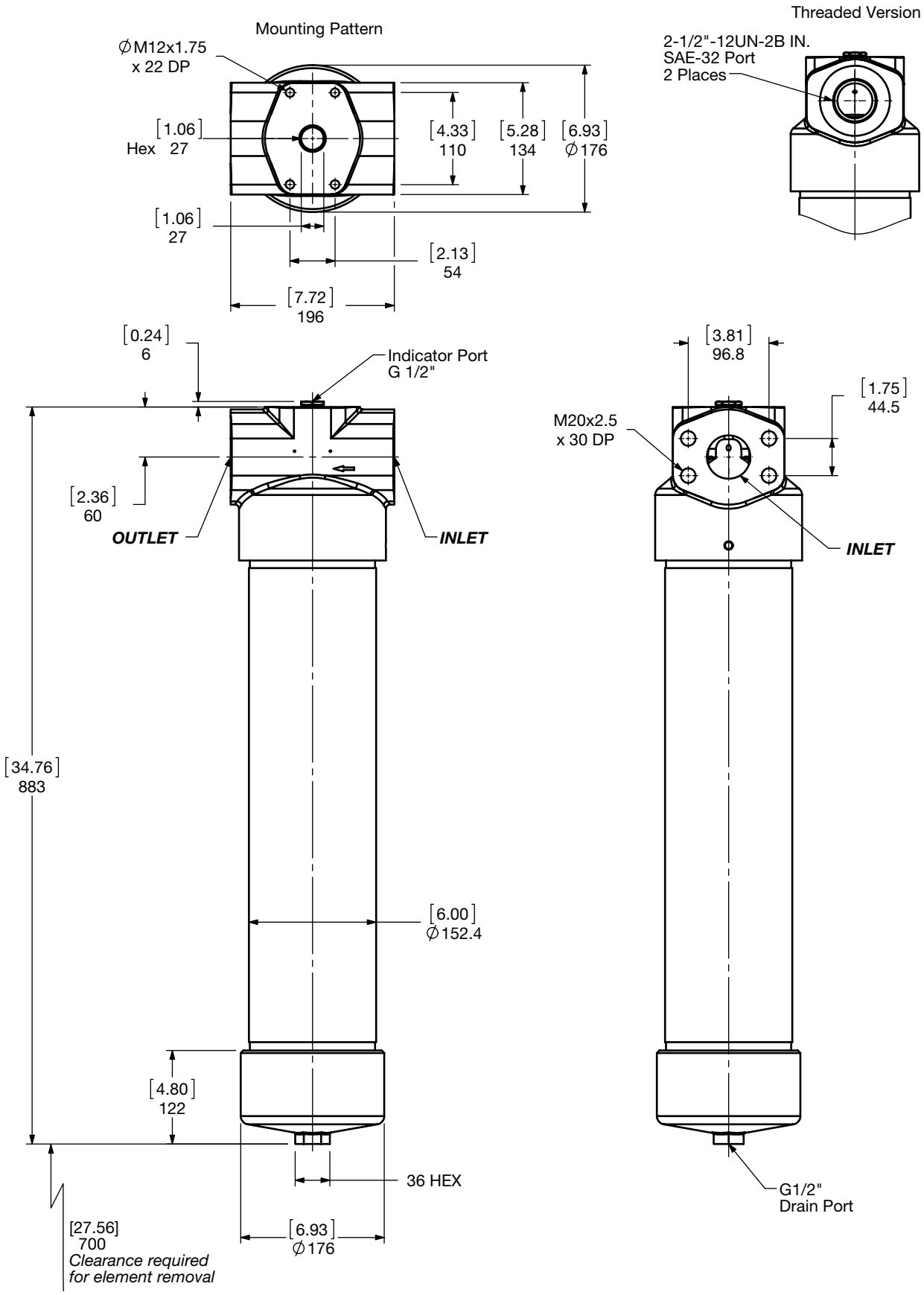
Dimensions
DF/DFF 1500 3.0 L Configuration



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.

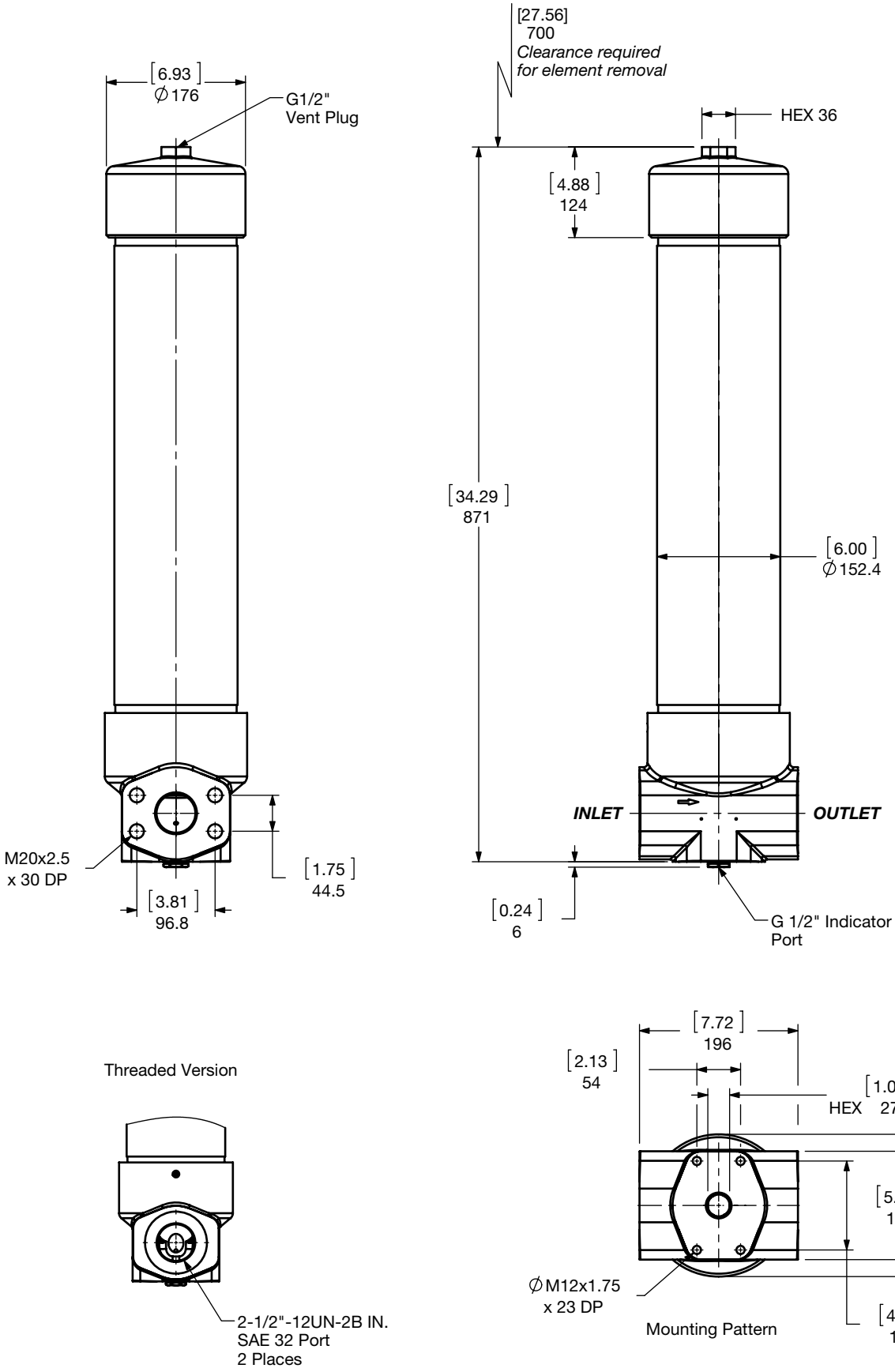
Dimensions
DF/DFF 1500 2.0 T Configuration



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



Size	DF/DFF 1500 3.0 "T"
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.

Sizing Information

Total pressure loss through the filter is as follows:

Assembly ΔP = Housing ΔP + Element ΔP

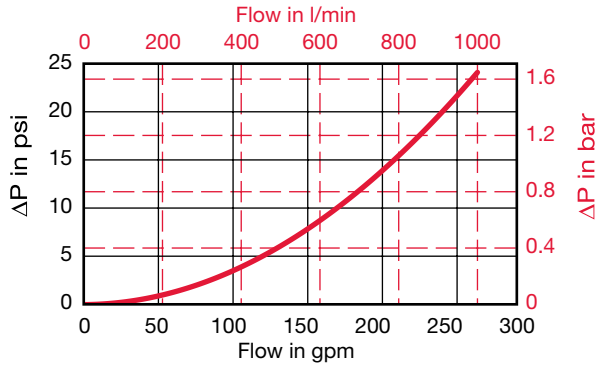
Housing Curve:

Pressure loss through housing is as follows:

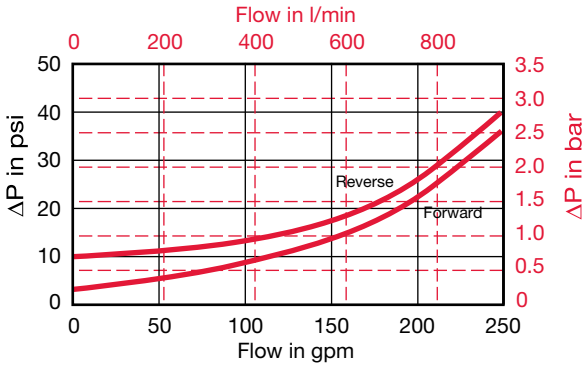
$$\text{Housing } \Delta P = \text{Housing Curve } \Delta P \times \frac{\text{Actual Specific Gravity}}{0.86}$$

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

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

Optimicron	...D...ON (Pressure Elements)					
Size	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm
1500 D XXX ON	0.09	0.053	0.038	0.026	0.02	0.015

Betamicron	...D...BH4HC (High Collapse)			
Size	3 µm	5 µm	10 µm	20 µm
1500 D XXX BH4HC	0.077	0.044	0.033	0.027

Wire Mesh	...D...W/HC Elements
Size	...D...W/HC Elements 25, 50, 100, 200 µm
1500 D XXX W/HC	0.001

Metal Fiber	...D...V Elements (High Collapse)			
Size	3 µm	5 µm	10 µm	20 µm
1500 D XXX V	0.016	0.011	0.011	0.005

All Element K Factors in psi / gpm.

Notes