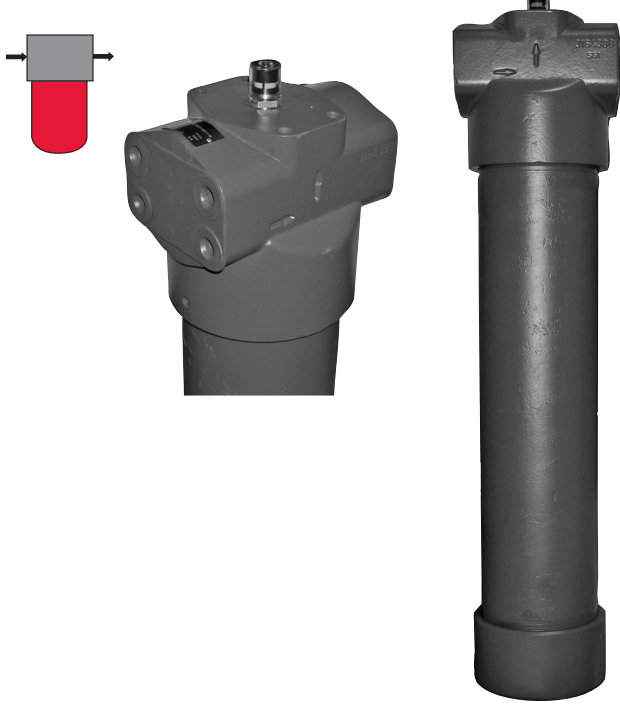


HIGH PRESSURE FILTERS

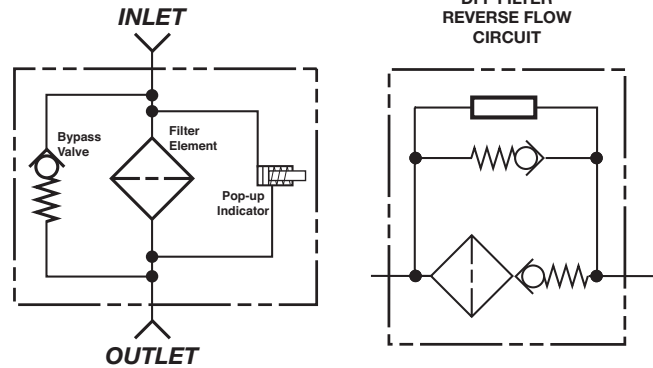
DF/DFF 1500 Series

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.

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 psi (420 bar) Fatigue Pressure 6090 psi (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	$\Delta P = 29$ psid (2 bar) -10% $\Delta P = 72$ psid (5 bar) -10% $\Delta P = 116$ psid (8 bar) -10% (non-bypass)
Bypass Valve Cracking Pressure	$\Delta P = 43$ psid (3 bar) +10% $\Delta P = 87$ psid (6 bar) +10% Non Bypass Available

Applications



Agricultural



Automotive



Construction



Gearboxes



Industrial



Offshore



Commercial
Municipal



Power
Generation



Pulp & Paper



Railways



Shipbuilding



Steel / Heavy
Industry

Filter Type

DF = Inline filter DFF = Inline filter - Reverse flow

ON = Optimicron®
W/HC = Wire Mesh

1500 = 2" BSPP / SAE 32 Straight Thread / 2" SAE DN 51 Flange

$$T = 6090 \text{ psi} / 420 \text{ bar}$$

(omit) = T Port L = L Port

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

1, 3, 5, 10, 15, 20 = ON 3, 5, 10, 20 = BH/HC
25, 50, 100, 200 = W/HC 3, 5, 10, 20 = V

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

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*)

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

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

(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

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

1500 D 010 BH4HC / V

1500

1, 3, 5, 10, 15, 20 = ON 3, 5, 10, 20 = BH4HC
25, 50, 100, 200 = W/HC 3, 5, 10, 20 = V

ON, BH4HC, W/HC, **V**

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

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)

VD 5 B . X / V

$$VD = G \frac{1}{2} 6000 \text{ psi}$$

2 = 29 psid (2 bar) (option)
5 = 72 psid (5 bar) (standard)
Optional 15 psid (1 bar) & 116 psid (8 bar)
available upon request

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

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

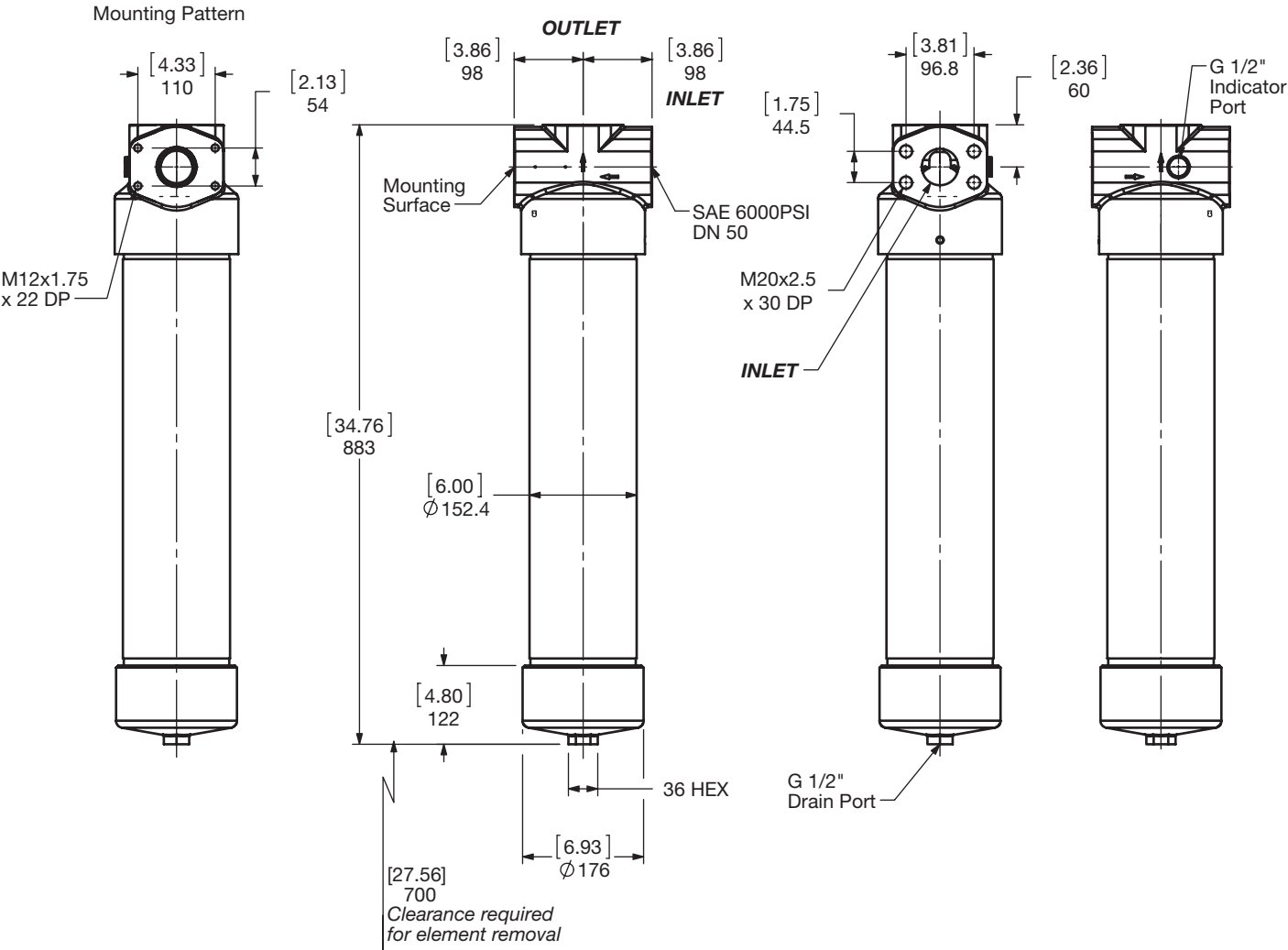
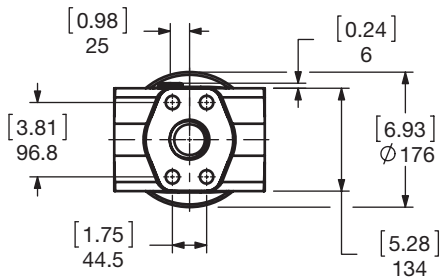
Underwriters Recognition (VM, VD types C, D, J, and J4 only) –
cRUus = Electrical Indicators with underwriter's recognition

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

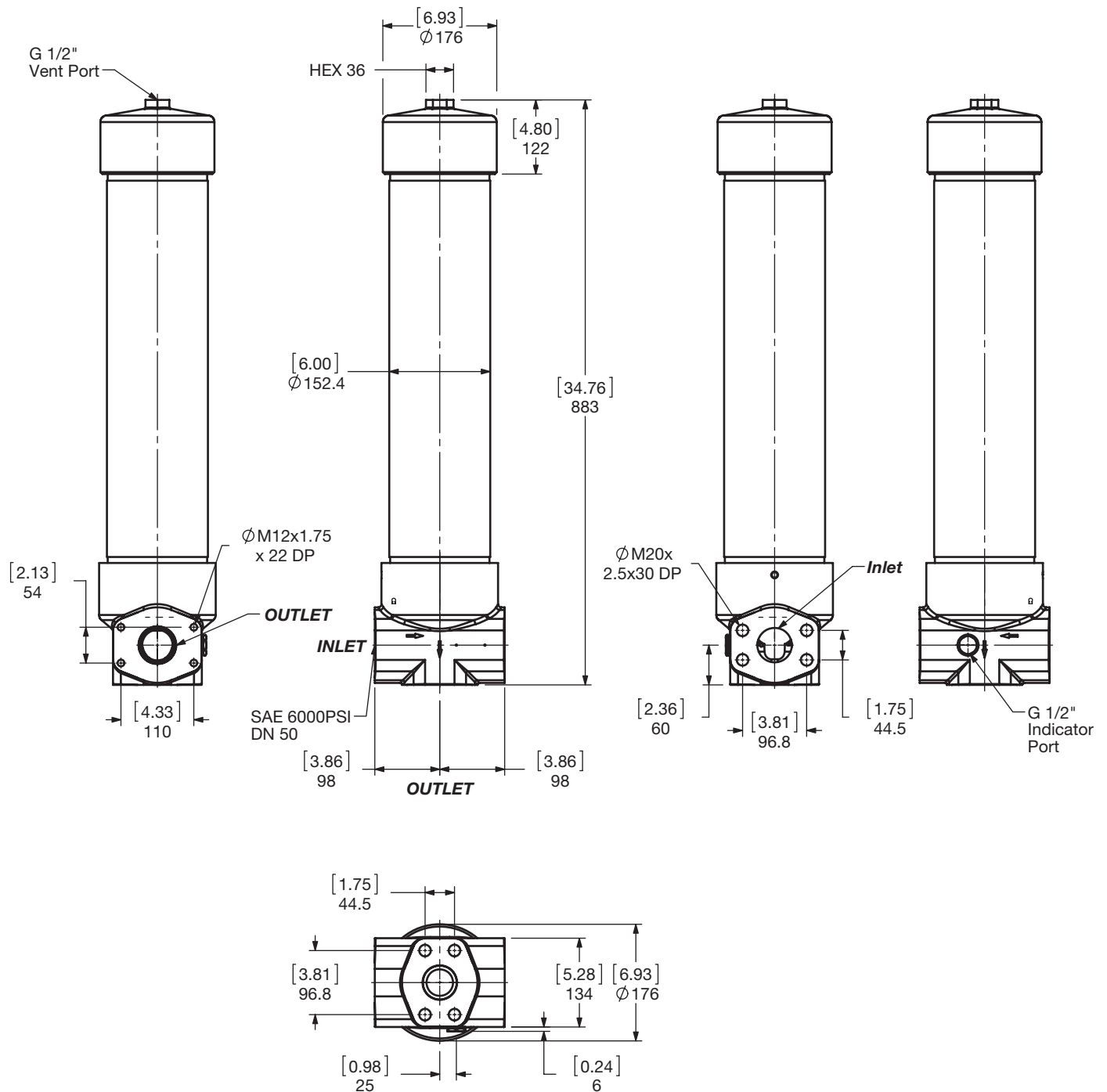
Dimensions
DF/DFF 1500 2.0 L Configuration



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

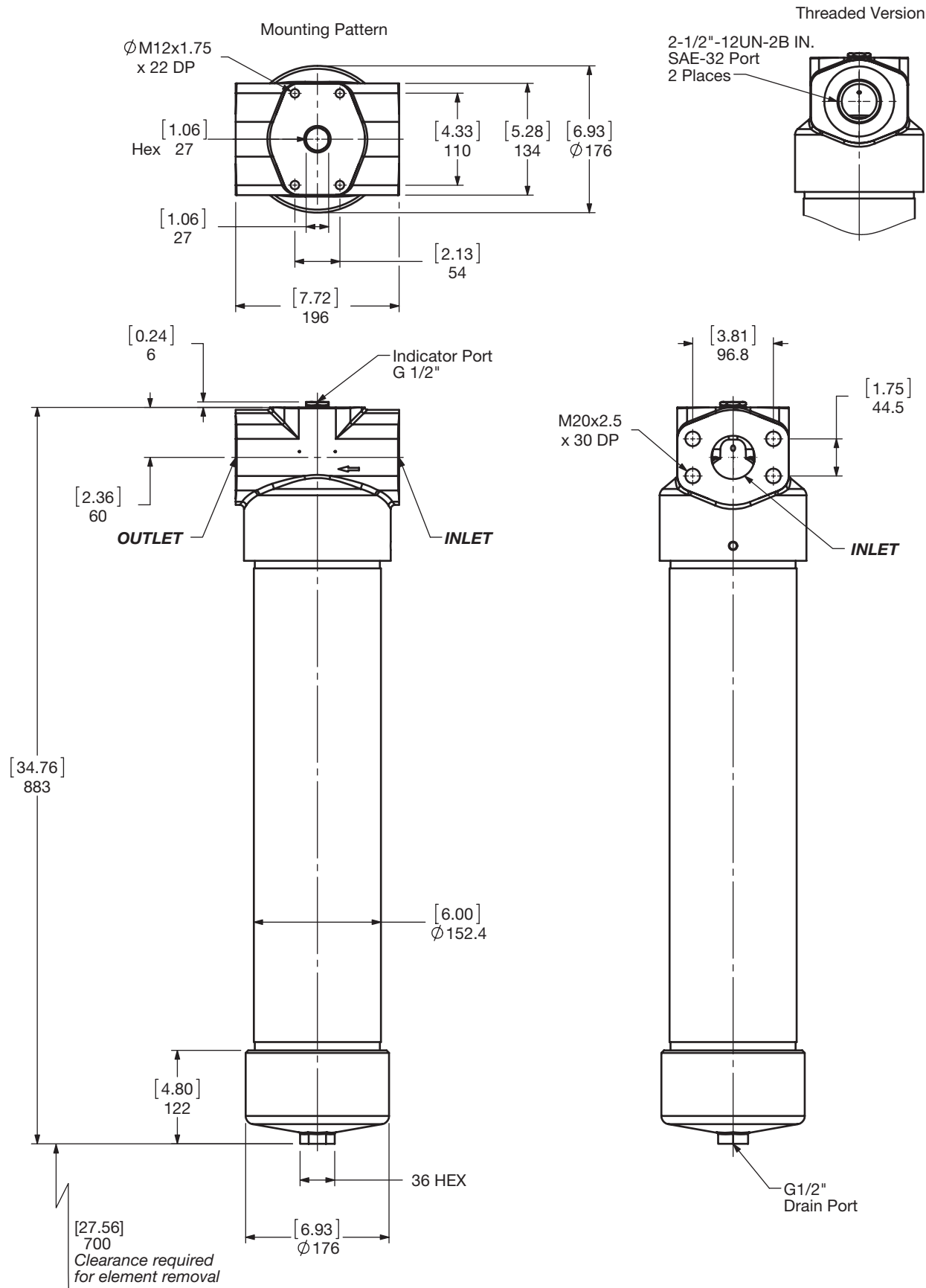


Size	DF/DFF 1500 3.0 "L"
Weight (lbs.)	152.6

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

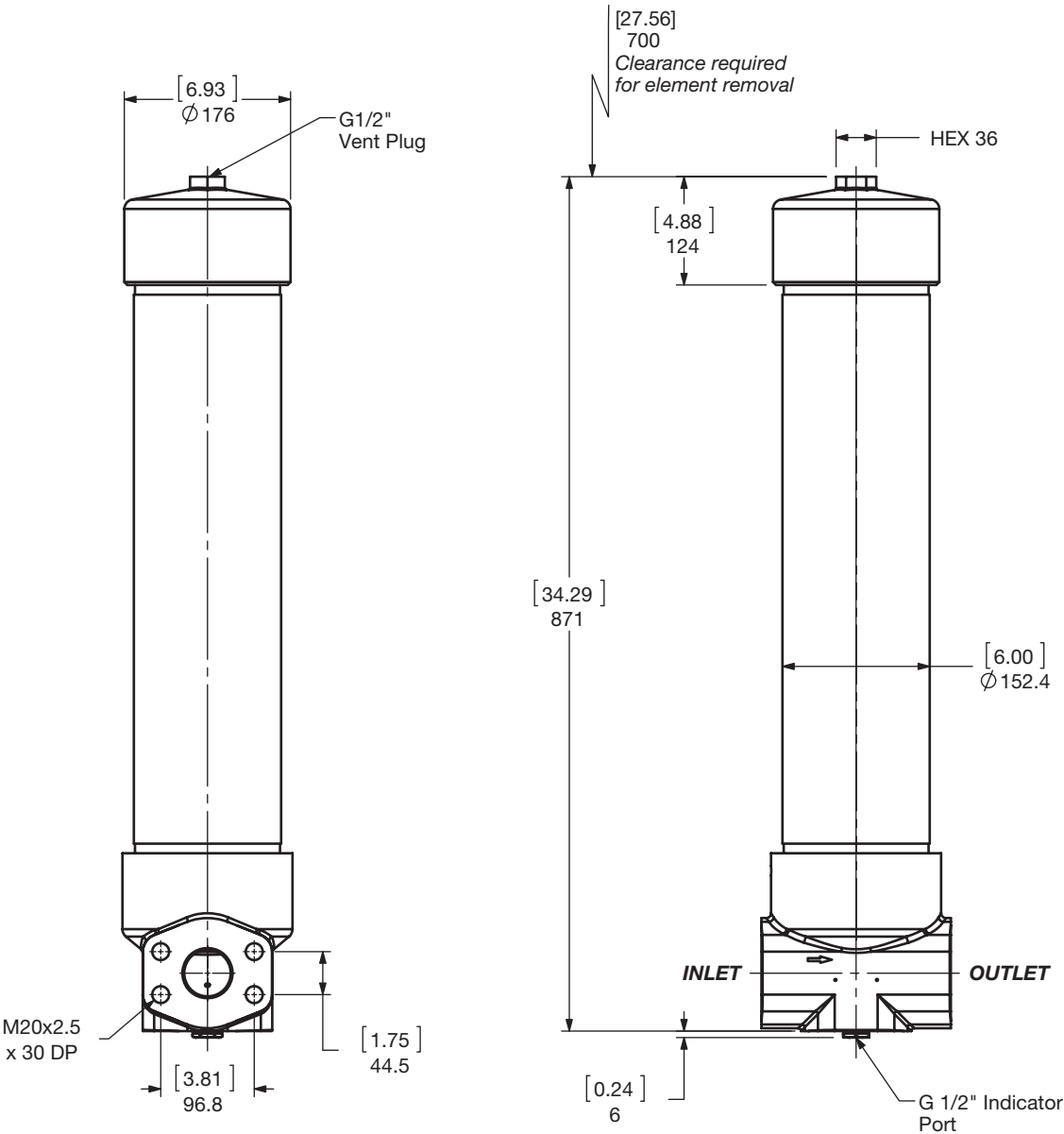
Dimensions DF/DFF 1500 2.0 T Configuration



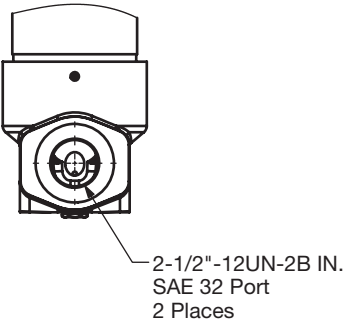
Size	DF/DFF 1500 2.0 "T"
Weight (lbs.)	152.8

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/DFE 1500 3.0 T Configuration



Threaded Version



Size	DF/DFE 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.

HIGH PRESSURE FILTERS

Sizing Information

Total pressure loss through the filter is as follows:

Assembly ΔP = Housing ΔP + Element ΔP

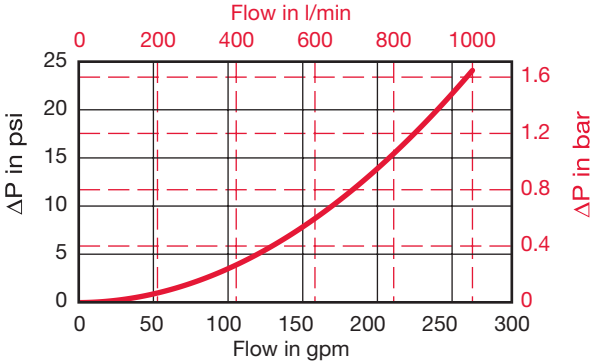
Housing Curve:

Pressure loss through housing is as follows:

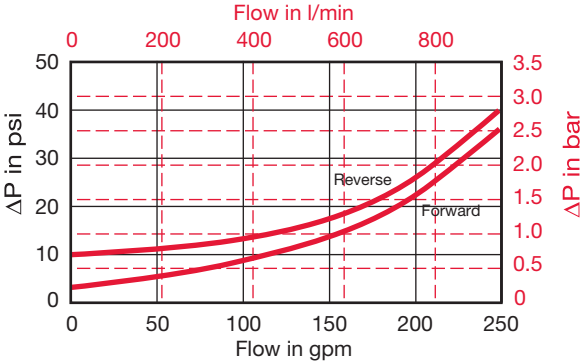
Housing ΔP = Housing Curve ΔP x $\frac{\text{Actual Specific Gravity}}{0.86}$

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

DF 1500



DFF 1500



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)

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

