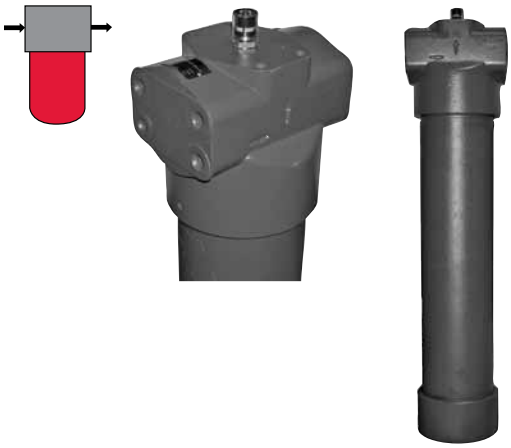
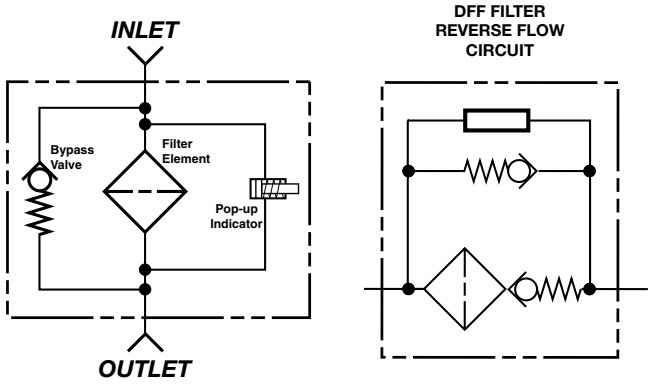
DF/DFF 1500 Series

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 bi-directional flow and single flow configurations
- Two part bowl for ease of operation and element change-out
- Filter head made of ductile iron
- Filter bowl made of steel
- Can mount head on top with bottom access or head on bottom with top access
- Available in 26" & 39" 9400/9901 element configurations - consult factory.

Applications

Technical Details

Mounting Method	4 Mounting holes in the filter head - M-12 Threads
Port Connection	SAE-32 four bolt code 62 Flange (DIN 50) with metric bolt threads M-20 to 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) Bowl: Steel
Flow Capacity	250 gpm (950 lpm)
Housing Pressure Rating	
Max. Operating Pressure	6090 psi (420 bar)
Proof Pressure	9135 psi (630 bar)
Fatigue Pressure	6090 psi (420 bar) @ 300,000 cycles
Burst Pressure	Contact HYDAC
Element Collapse Pressure Rating	
BN/HC, W/HC	435 psid (30 bar)
BH/HC	3045 psid (210 bar)
Fluid Temperature Range	-22° to 250°F (-30° to 121°C)
Fluid Compatability	Compatible with all petroleum oils and synthetic fluids rated for use with Fluoroelastomer or Ethylene Propylene seals. Contact HYDAC for information on special housing and element constructions available for use with water glycols, oil/water emulsions, and HWBF.
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

Model Code

DF BH/HC 1500 T G 3 A 2 . X / 12

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

Element Media
BN/HC = Betamicron® *(Low Collapse)* W/HC = Wire Screen
BH/HC = Betamicron® *(High Collapse) (required on DFF)*

Size and Nominal Connection
1500 = 2" BSPP / SAE 32 Straight Thread / 2" SAE Flange Code 62

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 Code 62 (SAE DIN 50)

Filtration Rating *(microns)*
3, 5, 10, 20 = BN/HC 3, 5, 10, 20 = BH/HC 25, 74, 149 = W/HC

Type of ΔP Clogging Indicator
A, B/BM, C, D

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) = SAE Flange Ports Code 62 *(metric bolt threads M-20)* 0 = BSPP 12 = SAE Straight Thread O-Ring Boss Ports

Seals
(omit) = Nitrile (NBR) *(standard)* V = Fluoroelastomer (FPM)

Bypass Valve
(omit) = Without Bypass *(BH4HC elements recommended)*
B3 = 43PSID Bypass *(optional)*
B6 = 87PSID Bypass *(standard)*
No bypass on DFF 1500

Supplementary Details
SO103H = Modification of BN4HC *(Low Collapse)* Element For Phosphate Esters
SO155H = Modification of BH4HC *(High Collapse)* Element For Phosphate Esters
W = Indicator with brass piston *(for use with water based fluids)*
L24, L48, L110, L220 = Lamp for D-type clogging indicator *(LXX, XX = voltage)*
T100 = Indicator Thermal Lockout, 100°F *(C and D indicators only)*
P26 = with 26" Betafit Element (9400/9901)
P39 = with 39" Betafit Element (9400/9901)

Replacement Element Model Code

1500 D 010 BN4HC / V

Size
1500

Filtration Rating *(micron)*
3, 5, 10, 20 = BN4HC
3, 5, 10, 20 = BH4HC
25, 74, 149 = W/HC

Element Media
BN4HC, BH4HC, W/HC

Supplementary Details
(omit) = standard
V = Fluoroelastomer (FPM) seals

Clogging Indicator Model Code

VD 5 B . X /

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/BM = Visual pop-up *(auto/manual reset)*
C = Electric switch
D = Electric switch and light

Modification Number

Supplementary Details

Seals
(omit) = Nitrile (NBR) *(standard)*
V = Fluoroelastomer (FPM)

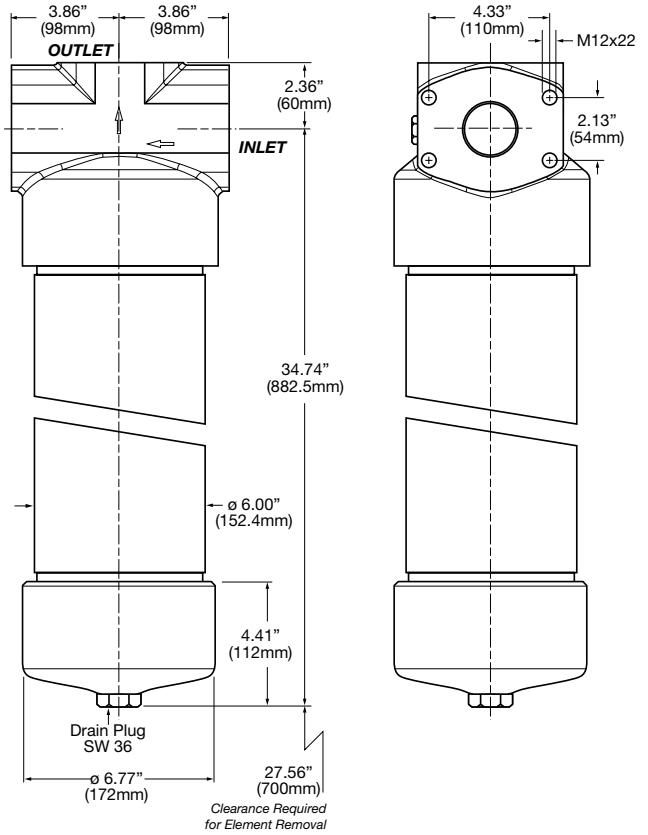
Light Voltage *(D type indicators only)*
L24 = 24V L110 = 110V

Thermal Lockout *(VM, VD types C, D, J, and J4 only)*
T100 = Lockout below 100°F

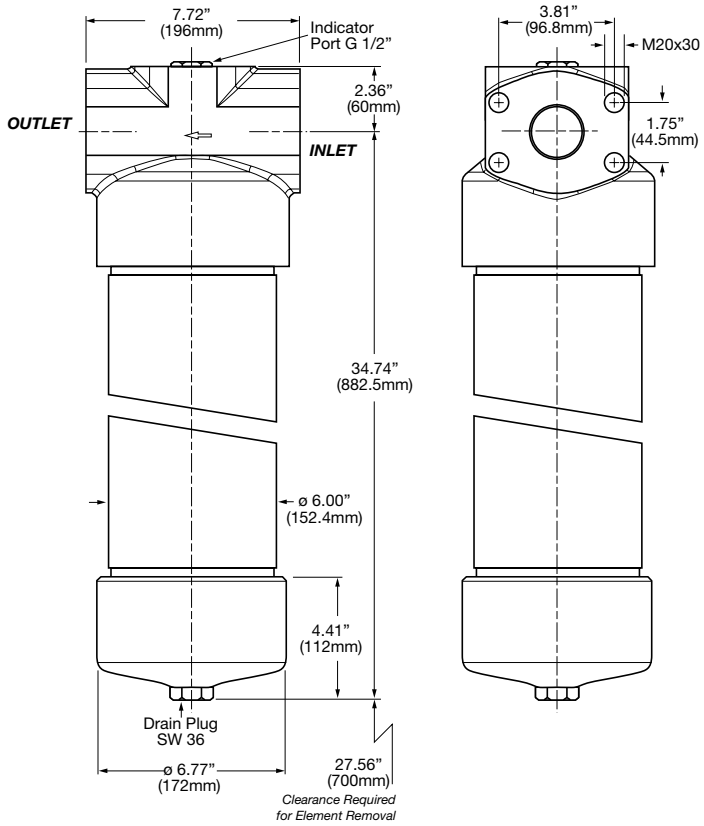
Underwrighters Approval *(VM, VD types C, D, J, and J4 only)*
CRUUS = Electrical Indicators
(*For additional details and options, see Clogging Indicators section.*)

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

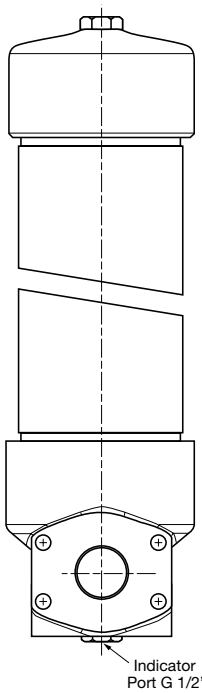
Dimensions 2.0 Version "L" Configuration



"T" Configuration

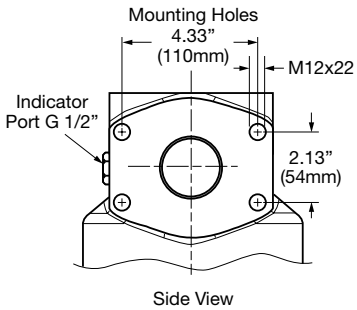


3.0 Version Element Access on Top Can be "L" or "T" Configuration

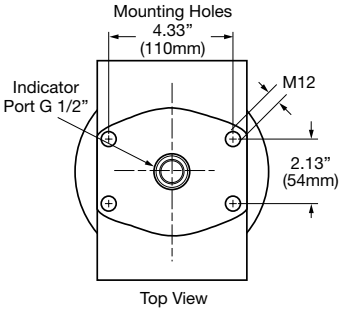


Note: No Drain Port provided – Customer to place Drain Port filter-side of isolation valving in piping.

Mounting Bolt Pattern "L" Configuration



"T" Configuration



Size	1500
Weight (lbs.)	170

Dimensions shown are for general information and overall envelope size only. Weights listed are without 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

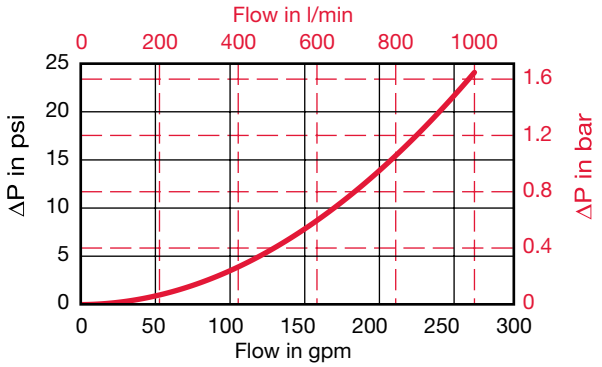
Housing Curve:

Pressure loss through housing is as follows:

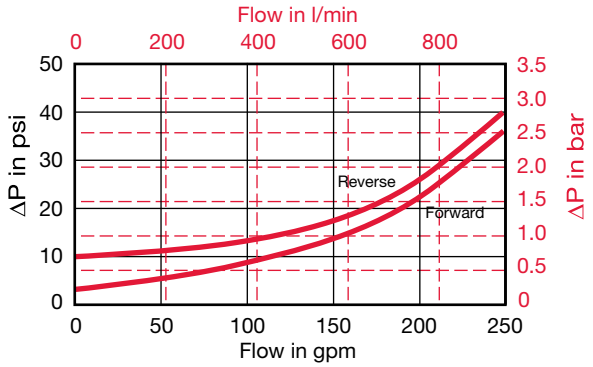
$$\text{Housing } \Delta P = \text{Housing Curve } \Delta P \times \frac{\text{Actual Specific Gravity}}{0.86}$$

Adjustments must be made for viscosity & specific gravity of the fluid to be used! *(see sizing section on page 19)*

DF 1500



DFF 1500



Element K Factors

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

Size	...D...BN4HC (Betamicron® Low Collapse)			
	3 µm	5 µm	10 µm	20 µm
1500	0.060	0.044	0.033	0.022

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

All Element K Factors in psi / gpm.