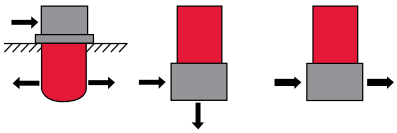
NF Series

In-Tank / Inline Filters

360 psi • up to 450 gpm (4” piping)
up to 1350 gpm (6” piping)





1.0 Version



2.0 Version



1350 / 2650

Features

- NF Filters have an extremely large filtration area and flow capacity of 450 gpm *(4” pipe size limitation)*
- NF Filters can be configured for in-tank or in-line applications
- Vent and drain ports are standard
- Aluminum alloy is water tolerant - anodizing is not required for high water based fluids (HWBF)
- Screw-on lid provides easy access to filter element for replacement
- Reusable contamination basket prevents re-entry of retained contaminants into the reservoir during element replacement *(1.0 Version only)*
- Filters can be fitted with clogging indicators to monitor the contamination level of the element
- Flange connection bolts included for all SAE-DIN flange ports

Note: This filter is configured with an …..R…. type (return/low pressure) element, so if the filter requires a bypass, the bypass is located in the closed end cap of the cartridge element.

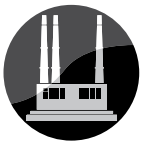
Applications



Agricultural



Gearboxes



Industrial



Power Generation



Pulp & Paper

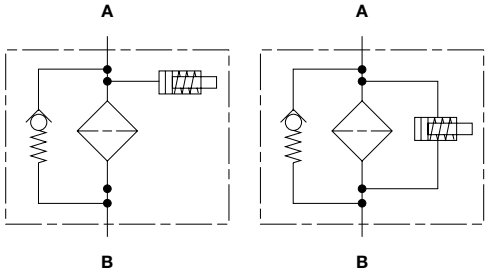


Shipbuilding



Steel / Heavy Industry

Hydraulic Symbol



1.0 Version 2.0 Version

Technical Specifications

Mounting Method	See drawings	
Port Connection		
330 / 500 / 750	SAE DN 38 (1 1/2”) Code 61	
1310 / 2610 1340 / 2640	4” SAE DN 102 Flange Code 61 *(with M16 bolts included) - other options available*	
1350 / 2650	SAE DN 51 (2”) Code 61 SAE DN (2 1/2”) Code 61 SAE DN 76 (3”) Code 61	
Flow Direction		
1.0 version	Inlet: Side	Outlet: Bottom
2.0 version	Inlet: Side	Outlet: Bottom
1350 / 2650	Inlet: Side	Outlet: Side
Construction Materials		
Head, Housing, Lid	Aluminum	
Elbows, Manifolds	Ductile Iron	
Flow Capacity	4” Headers	
330	80 gpm (303 lpm)	
500	132 gpm (500 lpm)	
750	200 gpm (757 lpm)	
1310, 1340, 1350	343 gpm (1300 lpm)	
2610, 2640, 2650, 5240, 7840, 10440	450 gpm (1700 lpm)	
	6” Headers	
5210..D7/D8	900 gpm (3407 lpm)	
7810.. D7/D8	1350 gpm (5110 lpm)	
10410.. D7/D8	1350 gpm (5110 lpm)	
Housing Pressure Rating		
Max. Allowable Working Pressure*	360 psi (25 bar)	
Fatigue Pressure	360 psi (25 bar)	
Burst Pressure	1754 psi (121 bar)	
Element Collapse Pressure Rating		
SN, W/HC	290 psid (20 bar)	
ECON2, BN4AM, P/HC, AM	145 psid (10 bar)	
V	435 psid (30 bar)	
Fluid Temperature Range	-22°F to 212°F (-30°C to 100°C)	
Consult HYDAC for applications below -22˚F (-30˚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%	1.0 - Static	
ΔP = 72 psid (5 bar) -10%	2.0 - Differential	
Bypass Valve Cracking Pressure		
ΔP = 14.5 psid (1 bar) +10%		
ΔP = 43 psid (3 bar) +10% *(standard)*		
ΔP = 87 psid (6 bar) +10%		

*Note: All NF…1.0 Filters MAWP reduce to 7 bar (101.5 psi) when using the following “VMF” and “VR” indicators: B, BM, E, ES, GC, LE, LZ.

PN#02081318 / 04.26 / FIL1907-2109

Model Code

NF SN 1310 D P 3 BM 1.0 / A V

Filter Type
NF = In-Tank Return Line Filter

Element Media
SN = Sustainmicron
BN/AM = Betamicron®/Aquamicron®
AM = Aquamicron®
P/HC = Polyester
XSX = Stat-X®
ECON2 = ECOmicron®
W/HC = Wire Mesh
V = Metal Fiber

Size
330, 500, 750, 1310, 1340, 1350, 2610, 2640, 2650, 5240, 7840, 10440

Operating Pressure
D = 360 psi (25 bar)
V = 101.5 psi (7 bar) *(When using the following "VR" indicators: B, BM, E, ES, GC, LE, LZ - 1.0 Ver.)*

Type of Connection
P = SAE DN 102 (4") Code 61 flange
K = SAE DN 38 (1 1/2") Code 61 flange *(330/500/750 only)*
7 = 6" ANSI CS 300lb. flange
L = SAE DN 51 (2") Code 61 flange
M = SAE DN 64 (2 1/2") Code 61 flange
N = SAE DN 76 (3") Code 61 flange
(1350/2650 only)

Filtration Rating *(micron)*
3, 5, 10, 20 = SN
40 = AM
3, 5, 10, 20 = XSX
10, 20 = P/HC
3, 5, 10, 20 = ECON2
25, 50, 100, 200 = W/HC
3, 10 = BN4AM
3, 5, 10, 20 = V

Type of Static or ΔP Clogging Indicator
A, B, BM, C, D, LE *(Others available upon request, see Clogging Indicators section.)*

Type Number / Modification Number
1.0 = In-Tank Filter - Static indicator *(1310/2610 only)*
2.0 = Inline Filter - ΔP indicator

Flow Path *(facing Inlet manifold headers)*
(omit) = Sizes 330, 500, 750, 1310 and 2610 only
A = Left inlet, Left outlet
B = Right inlet, Right outlet
C = Left inlet, Right outlet
D = Right inlet, Left outlet
(sizes 5240 - 10440 only)

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

Bypass Valve
(omit) = 43 psid (3 bar) *(standard)*
B1 = 14.5 psid (1 bar) *(lube or coolant)*
B6 = 87 psid (6 bar) *(return line extended life)*
KB = no bypass *(flushing system)*
not available with ECON2

Supplementary Details
SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids
L24, L48, L110, L220 = Lamp for D-type clogging indicator *(LXX, XX = voltage)*
EM = Manual vent valve set
VKD = Drain manifold
W = Modification of "V" elements for use with oil water emulsions (HFA) and water polymer solutions (HFC)
SFREE = Element specially designed to minimize electrostatic charge generation
QPG5 = Quality-Protected Design (sizes 1310-10410)
SO376 = Modification of ON and W/HC elements for HFA, HFB, HFC, and HFD flame retardant liquids
SO882 = Quality Protection Design

Replacement Element Model Code

1300 R 003 SN / V

Size
330, 500, 750,
1300 - for housings: 1310, 1340, 1350
2600 - for housings: 2610, 2640, 2650, 5240, 7840, 10440

Filtration Rating *(micron)*
3, 5, 10, 20 = SN
3, 5, 10, 20 = ECON2
40 = AM
25, 50, 100, 200 = W/HC
3, 5, 10, 20 = XSX
3, 10 = BN4AM
10, 20 = P/HC
3, 5, 10, 20 = V

Element Media
SN, XSX, ECON2, BN4AM, AM, P/HC, W/HC, V

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

Bypass Valve
(omit) = 43 psid (3 bar) *(standard)*
B1 = 14.5 psid (1 bar)
B6 = 87 psid (6 bar)
KB = no bypass

Supplementary Details
SO263 = *(same as above)*
W = *(same as above)*
SFREE = *(same as above)*
QPG5 = Quality-Protected Design (sizes 1300-2600)
SO376 = *(same as above)*
SO882 = *(same as above)*

Clogging Indicator Model Code

VR 2 BM . X / V

Indicator Prefix
VR = Static Pressure, G 1/2" *(1.0 ver.)*
VM = ΔP G 1/2" 3000 psi *(2.0 ver.)*
VD = ΔP G 1/2" 6000 psi *(2.0 ver. - LE Indicators only)*

Trip Pressure
2 = 29 psid (2 bar) *(return filters)*
5 = 72 psid (5 bar) *(optional)*

Type of Indicator
A = No indicator, plugged port
B = Pop-up indicator *(auto reset - static only)*
BM = Pop-up indicator *(manual reset)*
C = Electric switch - SPDT
D = Electric switch and LED light - SPDT
LE = Electric switch and pop-up

Modification Number

Supplementary Details

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

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

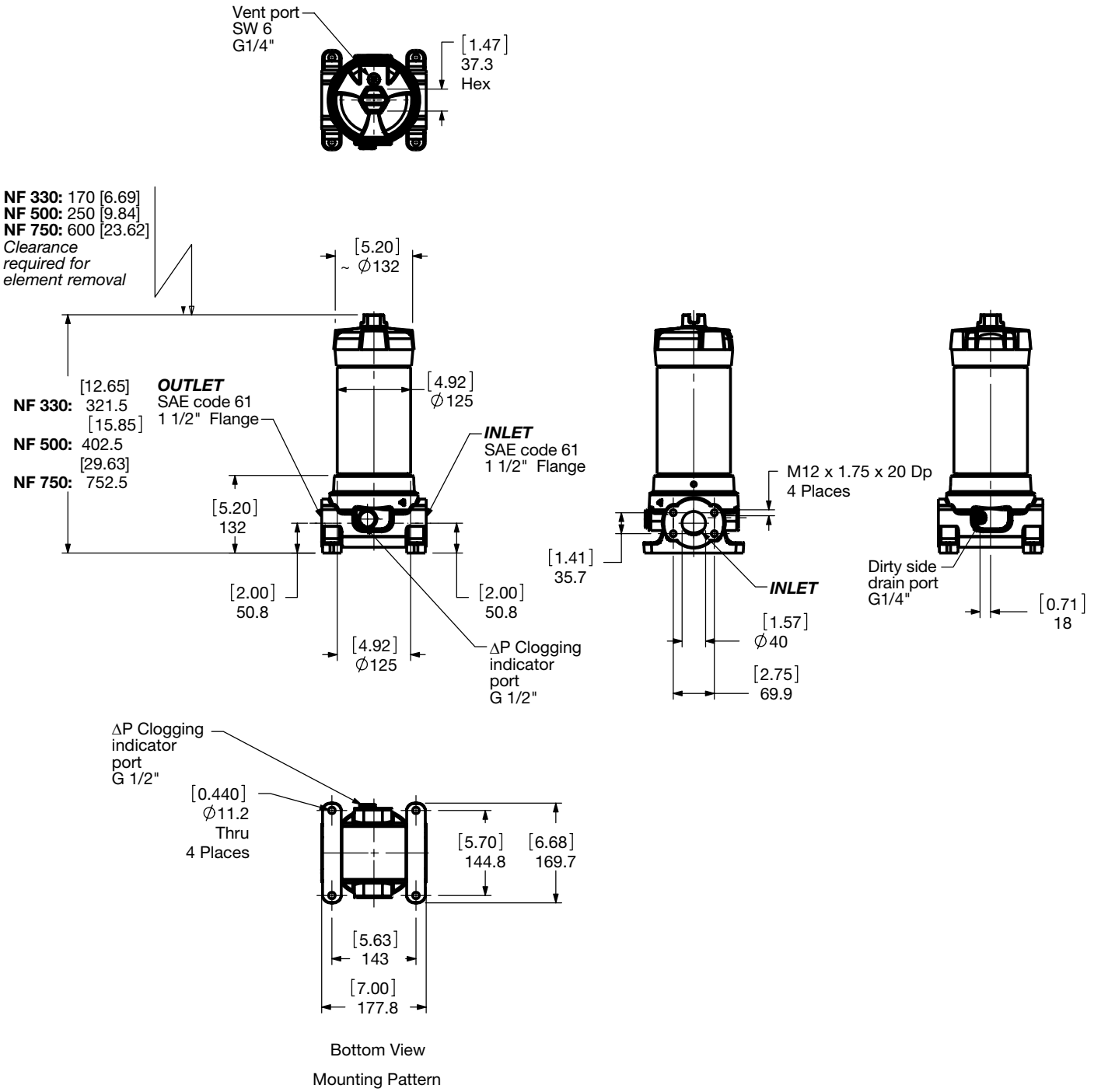
W = "VD…" indicator modified with a brass piston for use with high water based emulsions/solutions (HFA) & (HFC)

(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

LOW PRESSURE FILTERS

Dimensions
NF 330 - 750 2.0 Version (In-line)



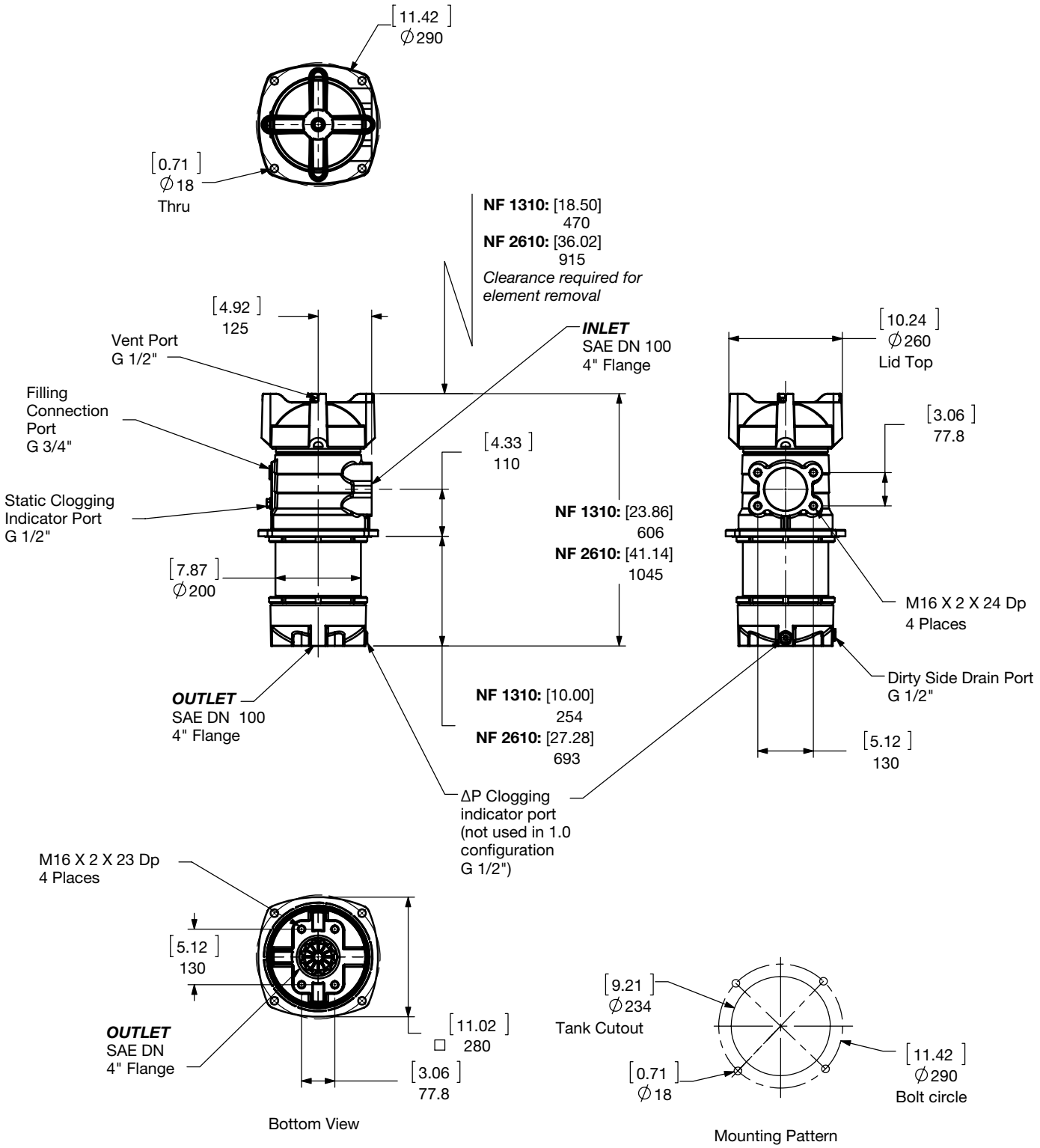
Bottom View

Mounting Pattern

Size	330	500	750
Weight (lbs.)	17.2	19.9	31.1

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:
NF 1310 / 2610 1.0 Version (In-Tank)

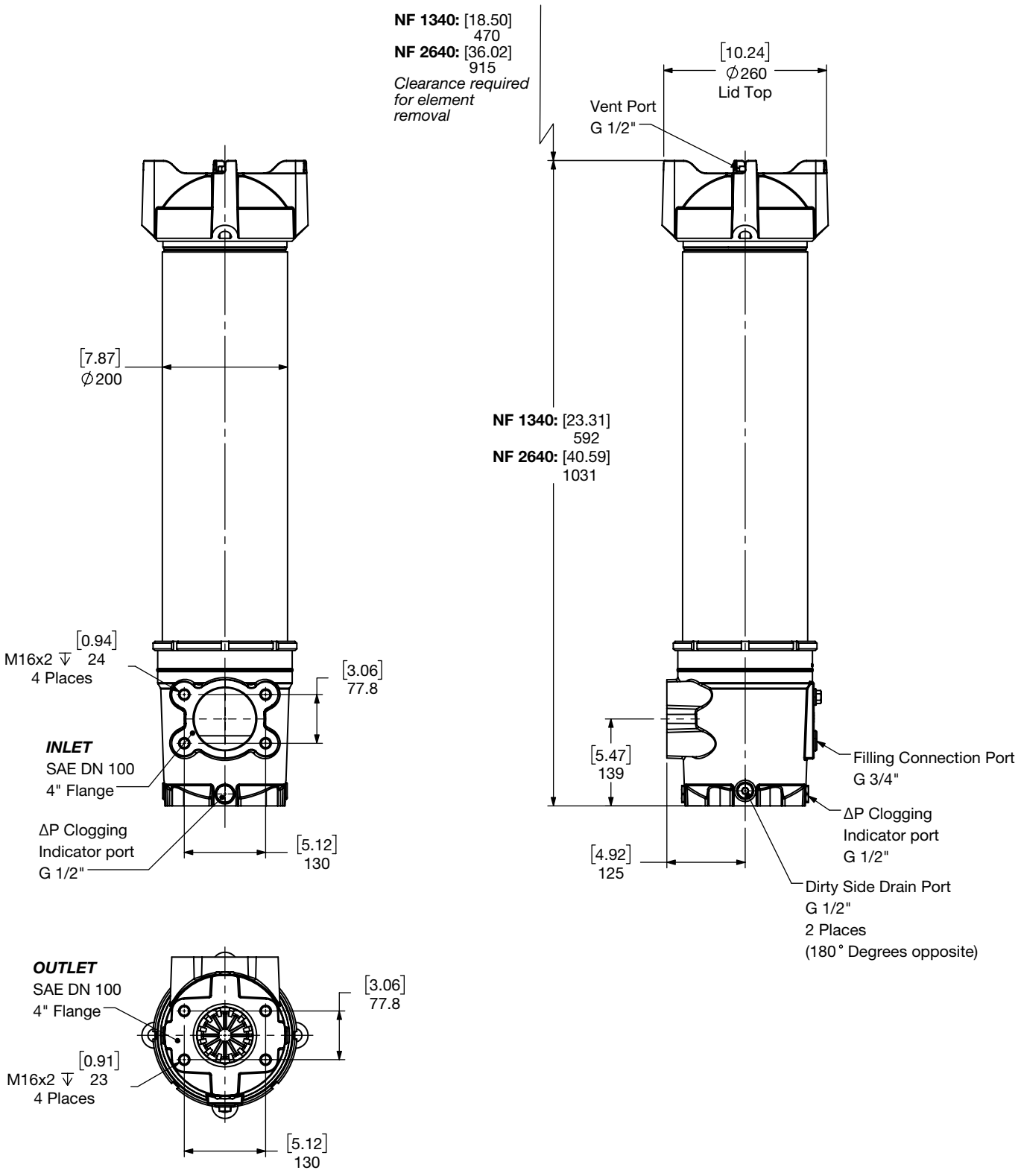


Size	1310	2610
Weight (lbs.)	37.5	50.7

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.

LOW PRESSURE FILTERS

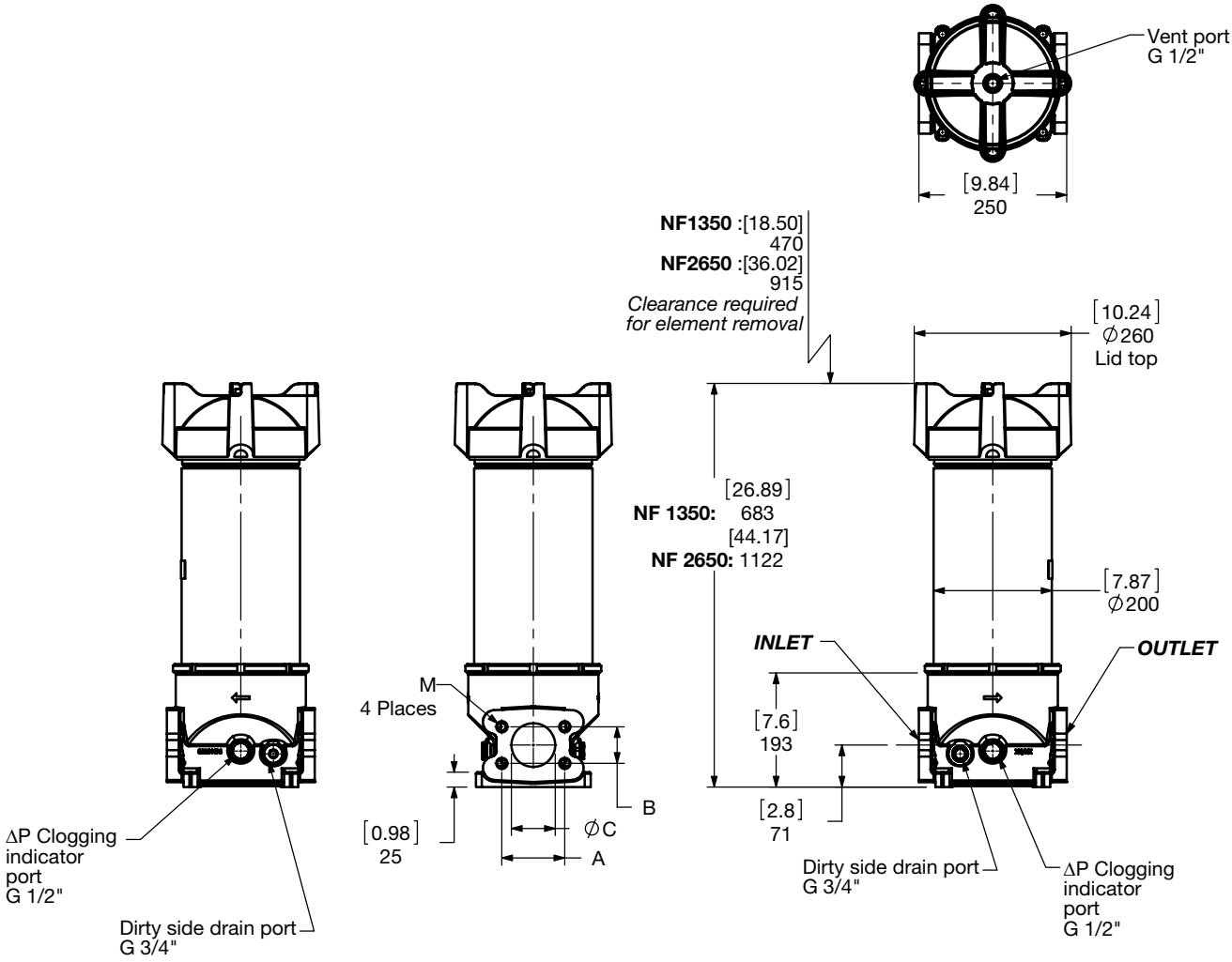
Dimensions:
NF 1340 / 2640 2.0 Version (In-line)



Size	1340	2640
Weight (lbs.)	37.5	50.7

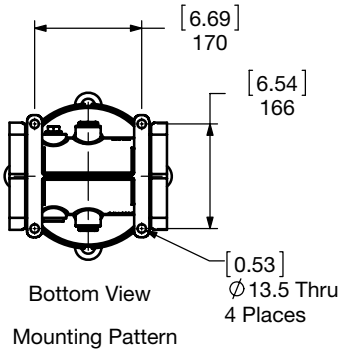
Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include elements.
For complete dimensions please contact HYDAC to request a certified print.

Dimensions:
NF 1350 / 2650 2.0 Version



Port Connections

Flange	A	B	øC	M
2” SAE-DN 50	77.8	42.9	50	M12 x 1.75 x 19 DP
2 1/2” SAE-DN 65	88.9	50.8	65	M12 x 1.75 x 19 DP
3” SAE-DN 80	106.4	62.9	75	M16 x 2.0 x 24 DP
4” SAE-DN 100	130.2	77.8	100	M16 x 2.0 thru

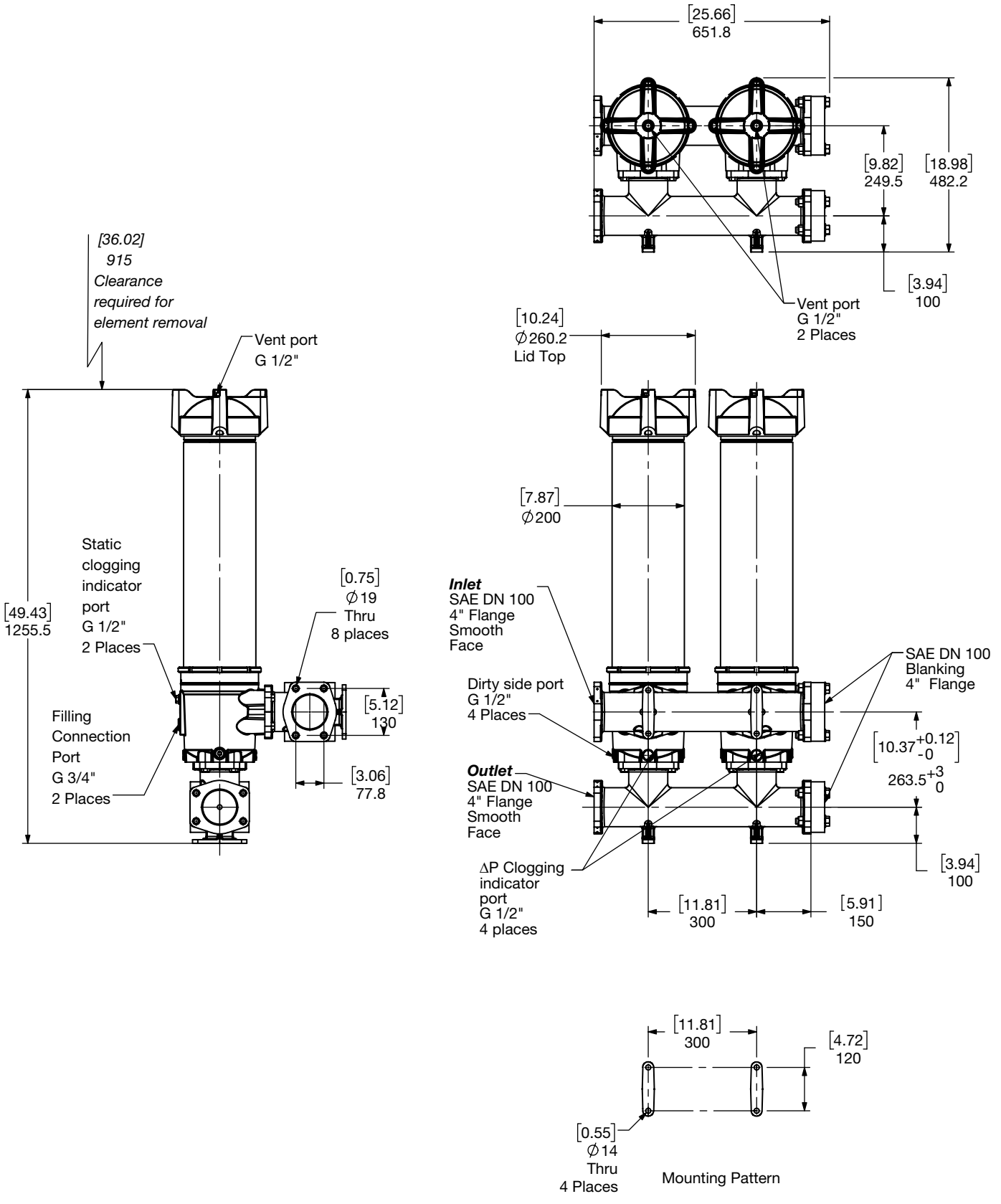


Size	1350	2650
Weight (lbs.)	39.7	55.2

Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include elements.
For complete dimensions please contact HYDAC to request a certified print.

LOW PRESSURE FILTERS

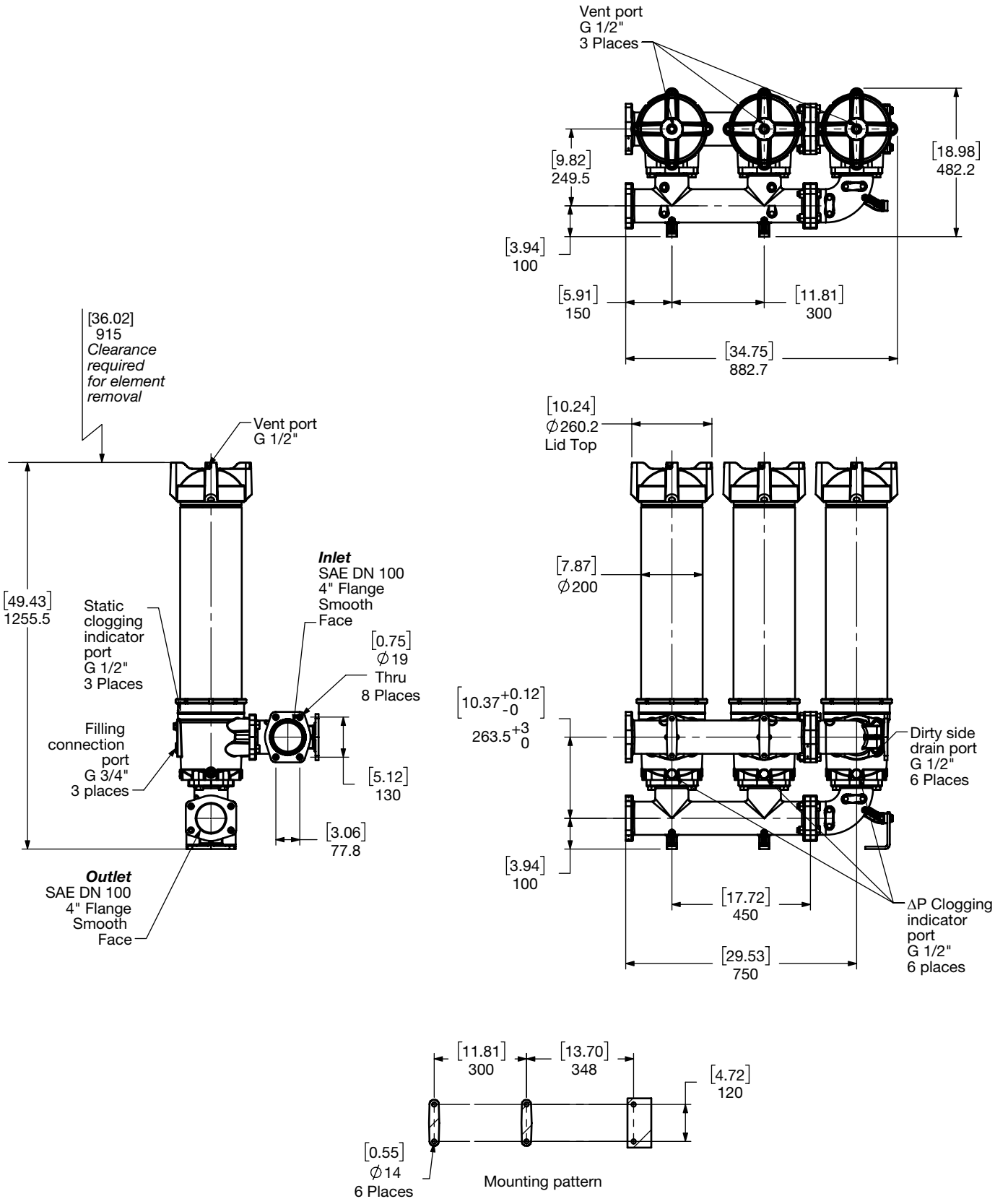
Dimensions:
NF 5240 2.0 Version



Size	5240
Weight (lbs.)	198.5

Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include elements.
For complete dimensions please contact HYDAC to request a certified print.

Dimensions:
NF 7840 2.0 Version

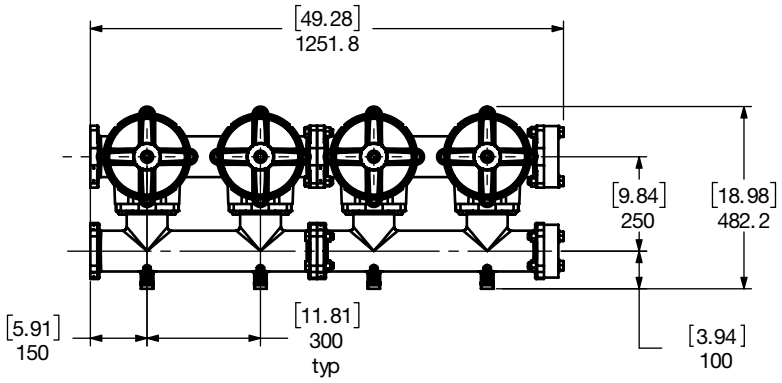


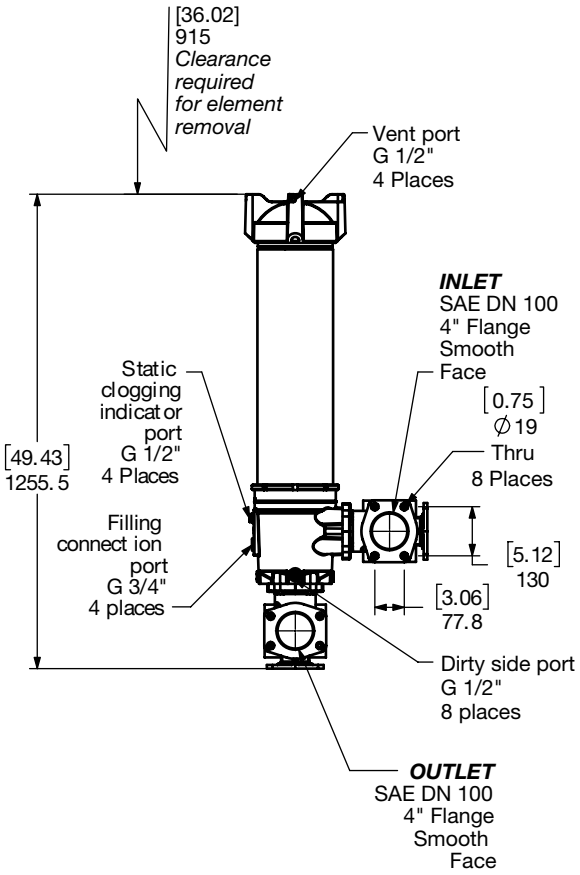
Size	7840
Weight (lbs.)	275.6

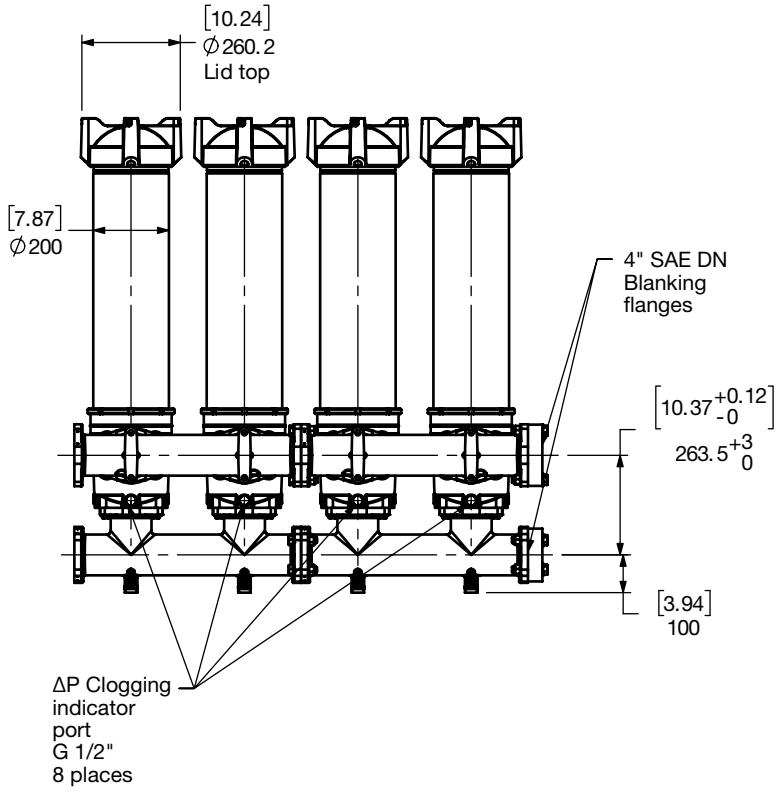
Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include elements.
For complete dimensions please contact HYDAC to request a certified print.

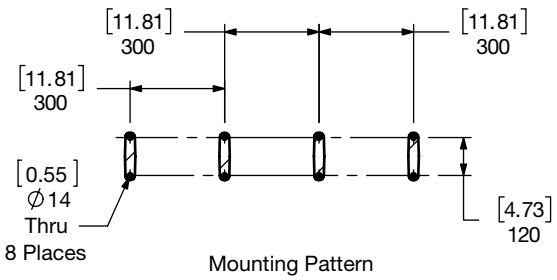
LOW PRESSURE FILTERS

Dimensions:
NF 10440 2.0 Version







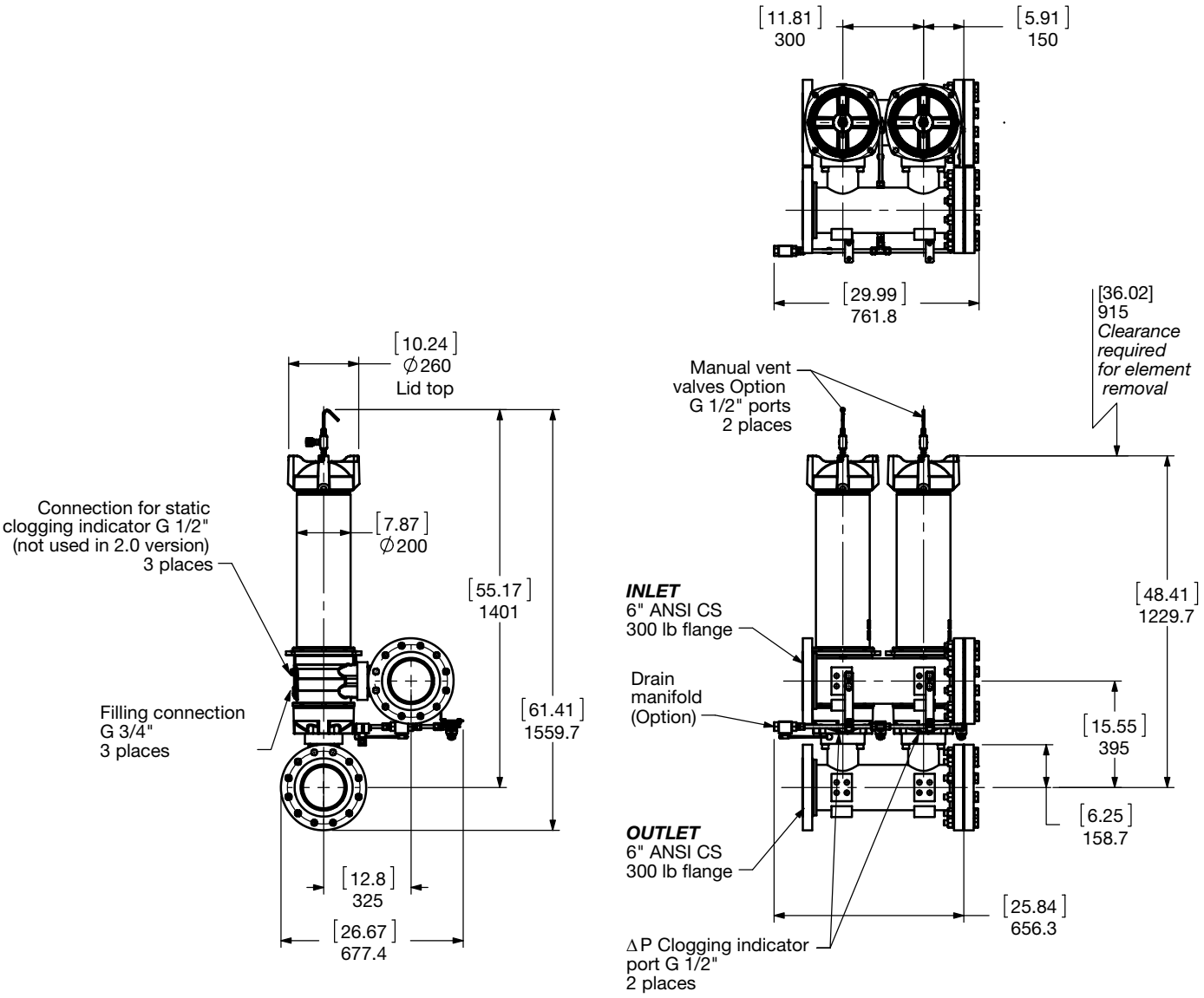


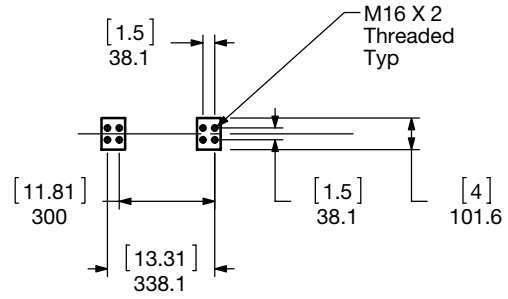
Mounting Pattern

Size	10440
Weight (lbs.)	397

Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include elements.
For complete dimensions please contact HYDAC to request a certified print.

Dimensions:
NF 5210DC7XX2.0/A EM-VKD (Modular Parallel High Flow)



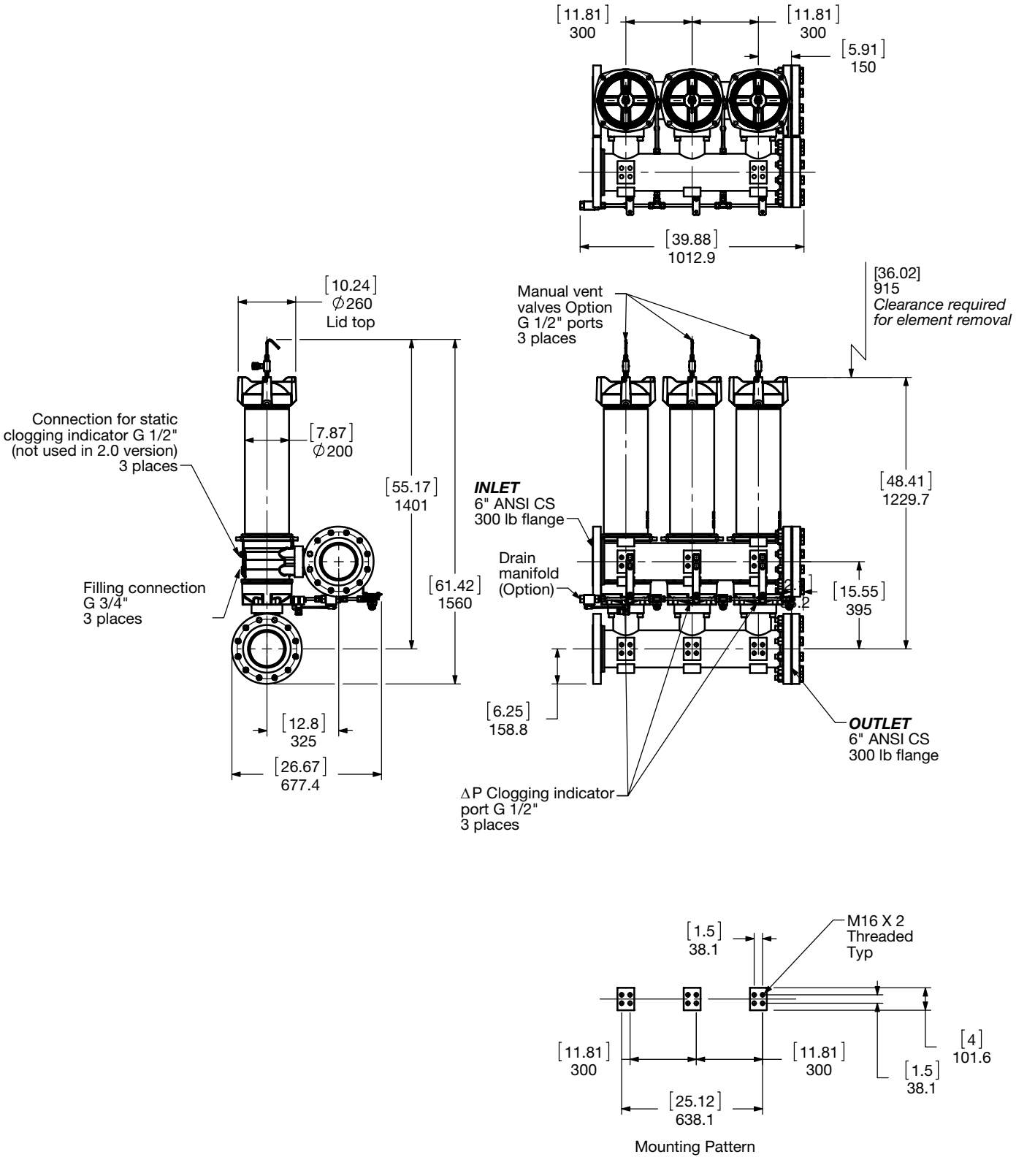


Mounting Pattern

Size	5210DC7XX2.0/A EM-VKD
Weight (lbs.)	485

Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include elements.
For complete dimensions please contact HYDAC to request a certified print.

Dimensions
NF 7810DC7XX2.0/A EM-VKD (Modular Parallel High Flow)



Mounting Pattern

Size	7810DC7XX2.0/C EM-VKD
Weight (lbs.)	520

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

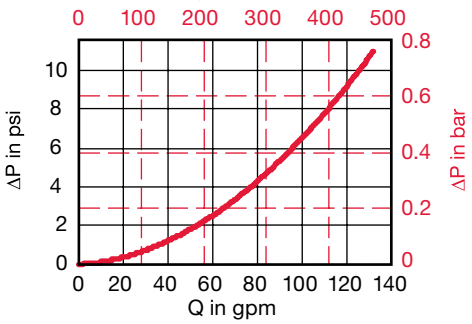
Housing Curve:

Pressure loss through housing is as follows:

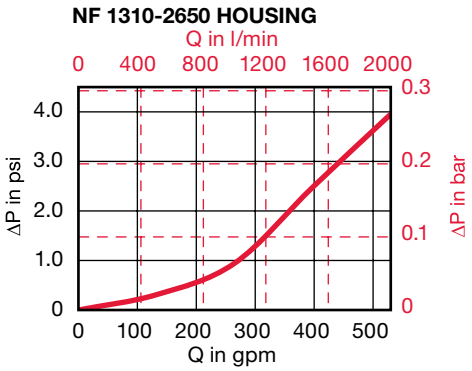
$$\text{Housing } \Delta P = \text{Housing Curve } \Delta P \times \frac{\text{Actual Specific Gravity}}{0.86}$$

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

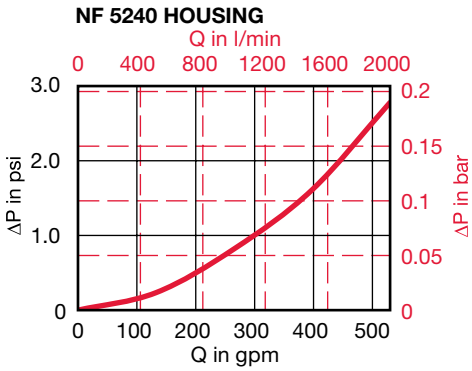
NF 330/500/750 HOUSING



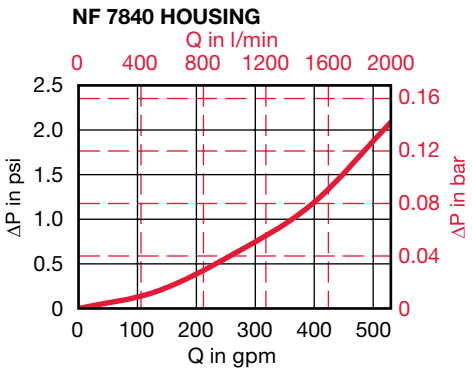
NF 1310-2650 HOUSING



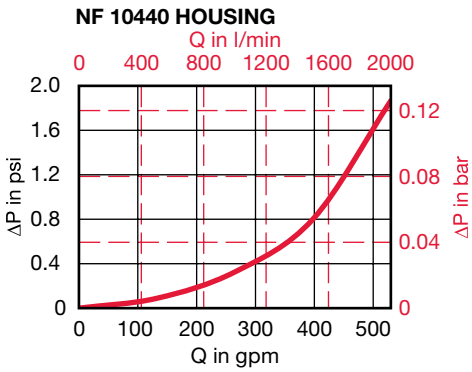
NF 5240 HOUSING



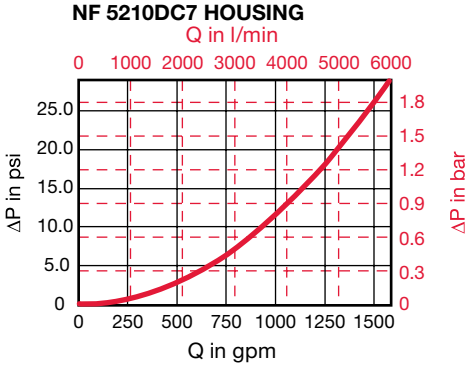
NF 7840 HOUSING



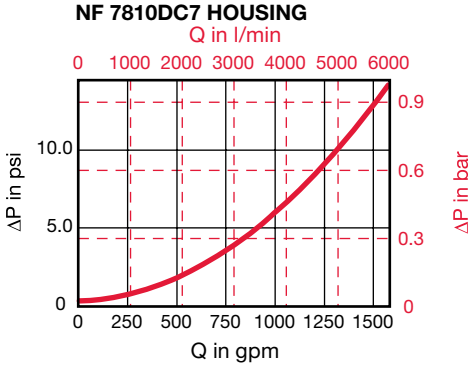
NF 10440 HOUSING



NF 5210DC7 HOUSING



NF 7810DC7 HOUSING



Element K Factors

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

Sustainmicron	...R...SN Elements			
Size	3 µm	5 µm	10 µm	20 µm
0330 R XXX SN	0.1771	0.1388	0.0692	0.0455
0500 R XXX SN	0.1158	0.0966	0.0510	0.0297
0750 R XXX SN	0.0464	0.0441	0.0244	0.0135
1300 R XXX SN	0.0338	0.0306	0.0169	0.0092
2600 R XXX SN	0.0169	0.0152	0.0085	0.0046

Stat-X	...R...XSX			
Size	3 µm	5 µm	10 µm	20 µm
0330 R XXX XSX	0.204	0.15	0.081	0.056
0500 R XXX XSX	0.143	0.104	0.06	0.038
0750 R XXX XSX	0.061	0.05	0.029	0.018
1300 R XXX XSX	0.04	0.032	0.019	0.012
2600 R XXX XSX	0.02	0.016	0.01	0.006

ECOmicron	...R...ECON2			
Size	3 µm	5 µm	10 µm	20 µm
0330 R XXX ECON2	0.230	0.148	0.093	0.066
0500 R XXX ECON2	0.165	0.104	0.071	0.044
0750 R XXX ECON2	0.071	0.049	0.033	0.022
1300 R XXX ECON2	0.044	0.033	0.022	0.016
2600 R XXX ECON2	0.022	0.016	0.011	0.005

Betamicron/Aquamicron	...R...BN4AM	
Size	3 µm	10 µm
0330 R XXX BN4AM	0.477	0.165
0500 R XXX BN4AM	0.313	0.11
0750 R XXX BN4AM	0.126	0.044
1300 R XXX BN4AM	0.088	0.033
2600 R XXX BN4AM	0.055	0.016

Aquamicron	...R...AM
Size	40 µm
0330 R 040 AM	0.115
0500 R 040 AM	0.076
0750 R 040 AM	0.030
1300 R 040 AM	0.026
2600 R 040 AM	0.013

Wire Mesh	...R...W/HC
Size	25, 50, 100, 200 µm
0330 R XXX W/HC	0.011
0500 R XXX W/HC	0.007
0750 R XXX W/HC	0.003
1300 R XXX W/HC	0.002
2600 R XXX W/HC	0.001

Polyester	...R...P/HC	
Size	10 µm	20 µm
0330 R XXX P/HC	0.016	0.008
0500 R XXX P/HC	0.011	0.005
0750 R XXX P/HC	0.004	0.002
1300 R XXX P/HC	0.004	0.002
2600 R XXX P/HC	0.002	0.001

All Element K Factors in psi / gpm.

Notes