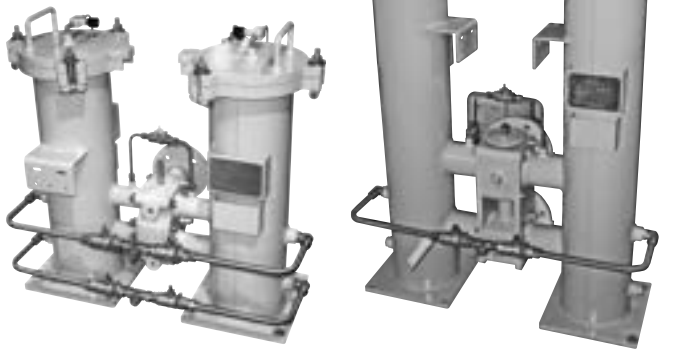
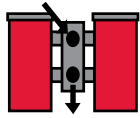


# SPECIAL ORDER FILTERS - LOW PRESSURE

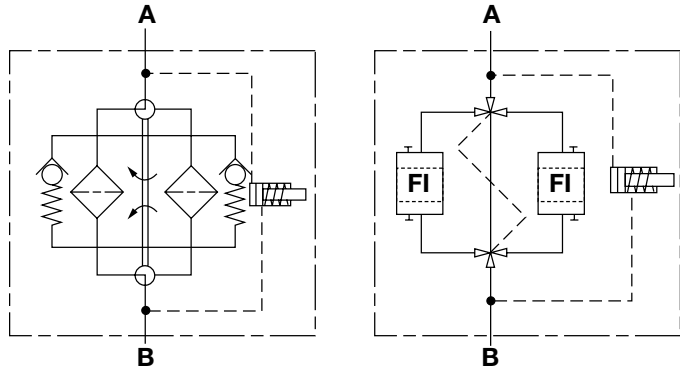
## RFLDH Welded Series

Inline Duplex Filters

150 psi • up to 700 gpm



### Hydraulic Symbol



### Features

- Models are available in carbon and stainless steel versions. Lids are swing bolt mounted.
- ANSI flange connections
- Inlet and outlet connections are located on the same side of the transfer valve.
- Transfer valve and pressure equalization line allow easy changeover between filter housings without costly system shutdown.
- Clogging indicators have no external dynamic seal. High reliability is achieved and magnetic actuation eliminates a leak point.
- Stainless drain piping with ball valves available.
- Air bleed line available
- ASME stamp available
- Australian AS1210 approval available
- Canadian registration approval available

Notes: 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.

Most states and local jurisdictions in the United States require pressure vessels to be ASME stamped. It is the responsibility of the end customer to research and fully understand the ASME code requirements of the jurisdiction this filter will ultimately be installed in, and to fully communicate these requirements to HYDAC.

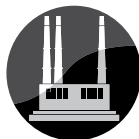
### Applications



Automotive



Gearboxes



Industrial



Power Generation



Pulp & Paper



Shipbuilding



Steel / Heavy Industry

### Technical Specifications

<b>Mounting Method</b>	Floor mounted legs <i>(Filters must not be used as pipe support)</i>
<b>Port Connection</b>	1300/1303 2" ANSI 150# Flange 2500/2503 3" ANSI 150# Flange 1320/1323, 2520/2523 4" ANSI 150# Flange 4020/4023 6" ANSI 150# Flange
<b>Flow Direction</b>	Inlet: Front Top Outlet: Front Bottom
<b>Construction Materials</b>	1300, 1320, 2500, 2520, 4020 - Carbon Steel 1303, 1323, 2503, 2523, 4023 - Stainless Steel
<b>Flow Capacity</b>	1300/1303 167 gpm (650 lpm) 1320/1323 304 gpm (1150 lpm) 2500/2503 270 gpm (1050 lpm) 2520/2523 525 gpm (2000 lpm) 4020/4023 700 gpm (2650 lpm)
<b>Housing Pressure Rating</b>	Max. Allowable Working Pressure 150 psi (10 bar) standard Proof Pressure (ASME) 195 psi (13.4 bar)
<b>Element Collapse Pressure Rating</b>	ON, W/HC 290 psid (20 bar) ECON2, BN4AM, AM, P/HC 145 psid (10 bar)
<b>Fluid Temperature Range</b>	14°F to 212°F (-10°C to 100°C) Consult HYDAC for applications 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%
<b>Bypass Valve Cracking Pressure</b>	$\Delta P = 43$ psid (3 bar) +10% $\Delta P = 87$ psid (6 bar) +10%

# SPECIAL ORDER FILTERS - LOW PRESSURE

## Model Code

**RFLDH ON 1300 B A 3 10 C 1 . X / ZU 150 V DH**

**Filter Type** \_\_\_\_\_

**Element Media** \_\_\_\_\_

ON = Optimicron®      BN/AM = Betamicron®/Aquamicron®  
 ECON2 = ECOMicron®      AM = Aquamicron®  
 W/HC = Wire Mesh      P/HC = Polyester

**Size** \_\_\_\_\_

1300 / 1303 / 1320 / 1323 / 2500 / 2503 / 2520 / 2523 / 4020 / 4023

**Operating Pressure** \_\_\_\_\_

B = 150 psi (10 bar)

**Type of Change Over Valve** \_\_\_\_\_

A = Ball Valve (other ratings available, consult factory)

**Type of Connection** \_\_\_\_\_

3 = 2" ANSI Flange (sizes 1300/1303)      5 = 4" ANSI Flange (sizes 1320/1323 & 2520/2523)  
 4 = 3" ANSI Flange (sizes 2500/2503)      7 = 6" ANSI Flange (sizes 4020/4023)

**Filtration Rating (microns)** \_\_\_\_\_

1, 3, 5, 10, 15, 20 = ON      3, 10 = BN/AM      3, 5, 10, 20 = ECON2  
 40 = AM      25, 50, 100, 200 = W/HC      10, 20 = P/HC

**Type of ΔP Clogging Indicator** \_\_\_\_\_

A, B, BM, C, D

**Type Code** \_\_\_\_\_

1

**Modification Number (latest version always supplied)** \_\_\_\_\_

**Country of Installation** \_\_\_\_\_

ZU = ASME Coded with "ASME" Stamp

**Flange** \_\_\_\_\_

150 = 150 lbs ANSI Flange

**Seals** \_\_\_\_\_

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

**Bypass Valve** \_\_\_\_\_

(omit) = 43 psid (3 bar) (standard)  
 B1 = 14.5 psid (1 bar) (lubrication or coolant applications)  
 B6 = 87 psid (6 bar) (return line extended life) ] not available with ECON2  
 KB = No Bypass (flushing system)

**Supplementary Details** \_\_\_\_\_

(omit) = Cover Lifting Device (Handle only)  
 DH = Cover Lifting Device (Davit lifting mechanism for sizes 4000 and larger, style may vary)  
 SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids  
 L24, L48, L110, L220 = Lamp for D-type clogging indicator (LXX, XX = voltage)  
 cRUus = Electrical indicator with underwriter's recognition  
 SFREE = Element specially designed to minimize electrostatic charge generation  
 VKD = Drain piping  
 EM = Air bleed valves  
 W = Indicator with brass piston (for water based fluids)

## Replacement Element Model Code

**1300 R 010 ON / V B6**

**Size** \_\_\_\_\_

0850, 1300, 1700, 2600

**Filtration Rating (micron)** \_\_\_\_\_

1, 3, 5, 10, 15, 20 = ON      3, 10 = BN4AM  
 3, 5, 10, 20 = ECON2      40 = AM  
 25, 50, 100, 200 = W/HC      10, 20 = P/HC

**Element Media** \_\_\_\_\_

ON, BN4AM, ECON2, AM, W/HC, P/HC

**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** \_\_\_\_\_

W = (same as above)  
 SO263 = (same as above)  
 SFREE = (same as above)

## Clogging Indicator Model Code

**VM 2 C . X /**

**Indicator Prefix** \_\_\_\_\_

VM = G 1/2 3000 psi

**Trip Pressure** \_\_\_\_\_

2 = 29 psid (2 bar) (standard)  
 5 = 72 psid (5 bar) (optional)

**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 & LED light - SPDT

**Modification Number** \_\_\_\_\_

**Supplementary Details** \_\_\_\_\_

**Seals** \_\_\_\_\_

(omit) = Nitrile (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

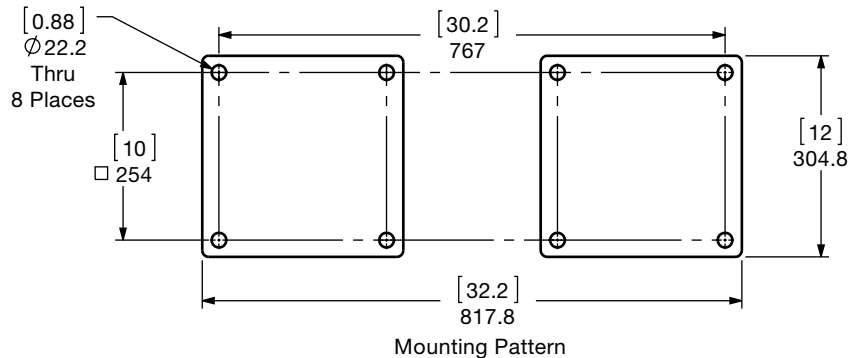
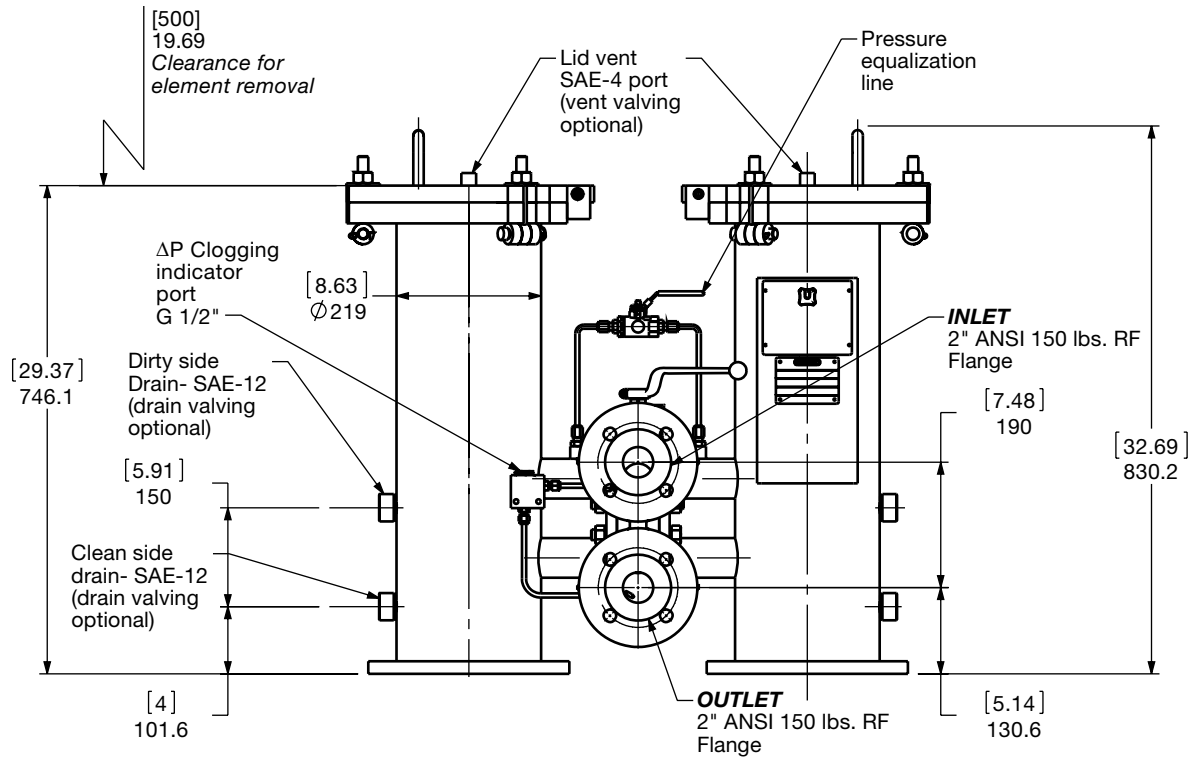
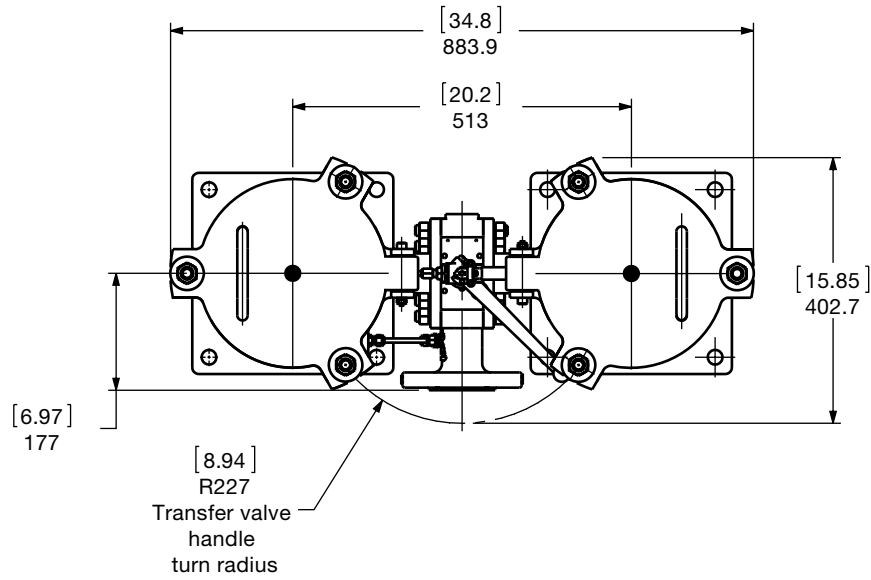
**Underwriters Recognition (VM, VD types C, D, J, and J4 only)** \_\_\_\_\_

cRUus = Electrical indicator with underwriter's recognition  
 (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

# SPECIAL ORDER FILTERS - LOW PRESSURE

Dimensions  
RFLDH 1300 / 1303

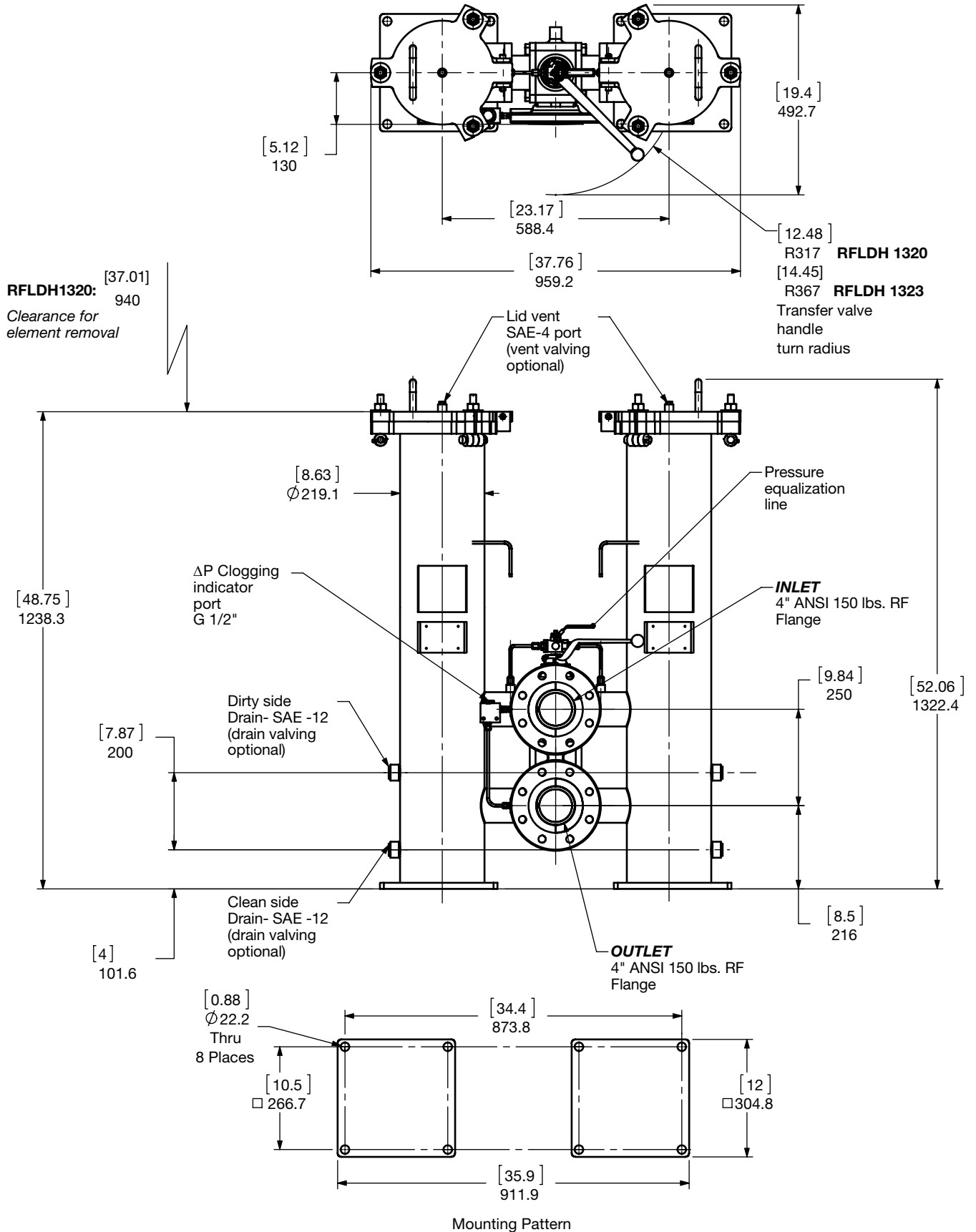


Size	1300	1303
Weight (lbs.)	475	475

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.

# SPECIAL ORDER FILTERS - LOW PRESSURE

## Dimensions RFLDH 1320 / 1323

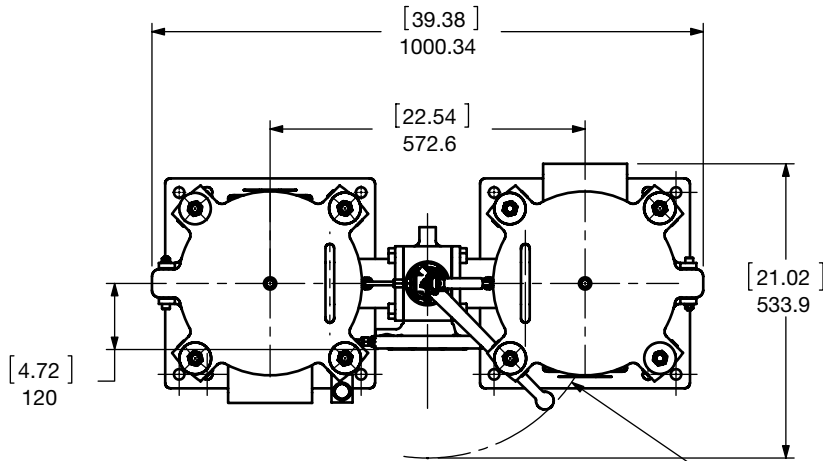


Size	1320	1323
Weight (lbs.)	575	575

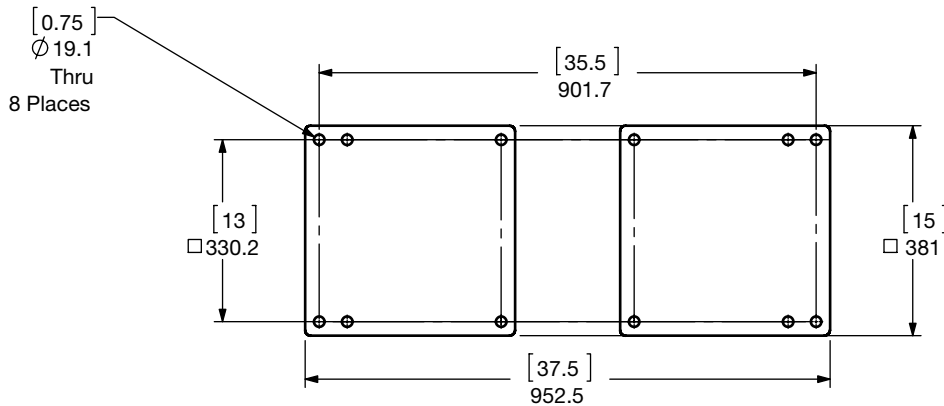
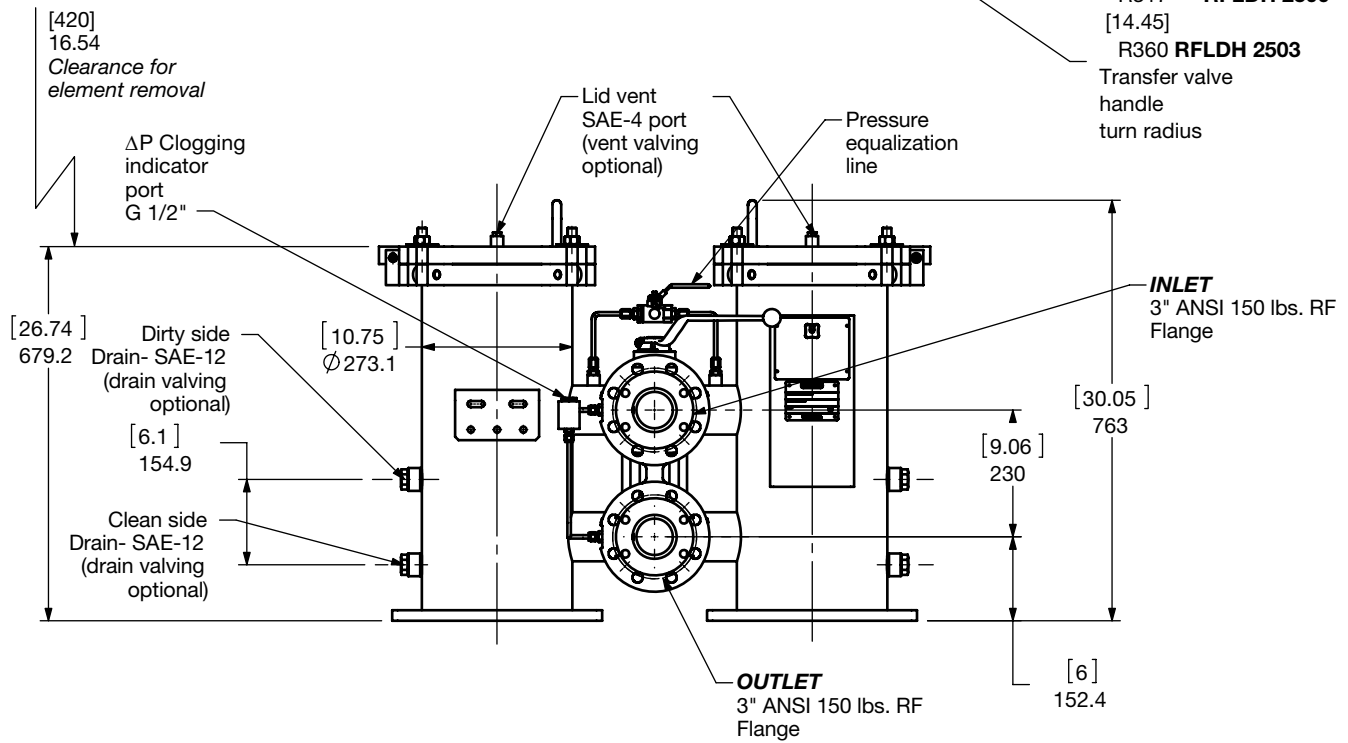
Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include element. For complete dimensions please contact HYDAC to request a certified print.

# SPECIAL ORDER FILTERS - LOW PRESSURE

Dimensions  
RFLDH 2500 / 2503



[12.48]  
R317 **RFLDH 2500**  
[14.45]  
R360 **RFLDH 2503**  
Transfer valve  
handle  
turn radius



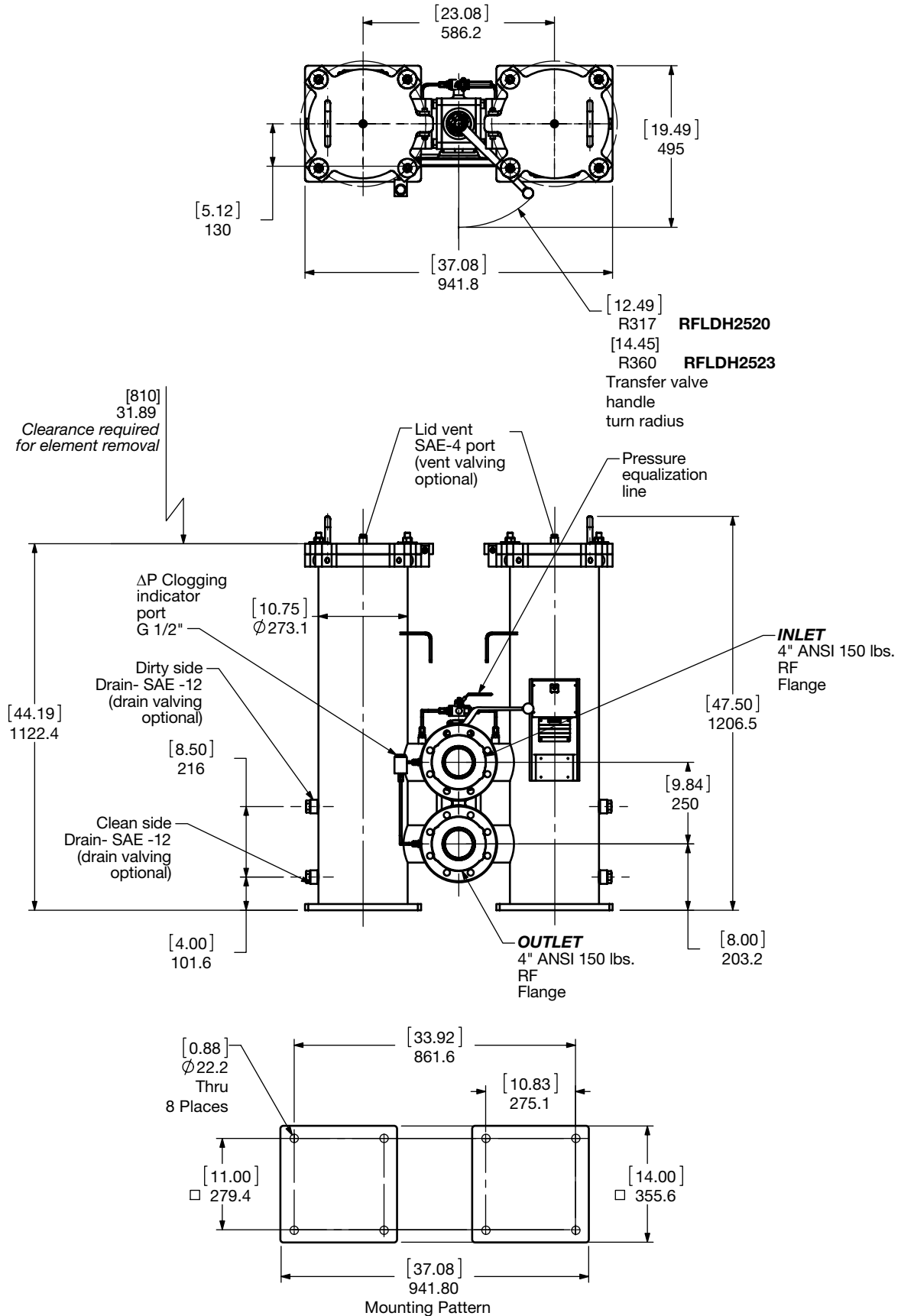
Mounting Pattern

Size	2500	2503
Weight (lbs.)	270	270

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.

# SPECIAL ORDER FILTERS - LOW PRESSURE

Dimensions  
RFLDH 2520 / 2523

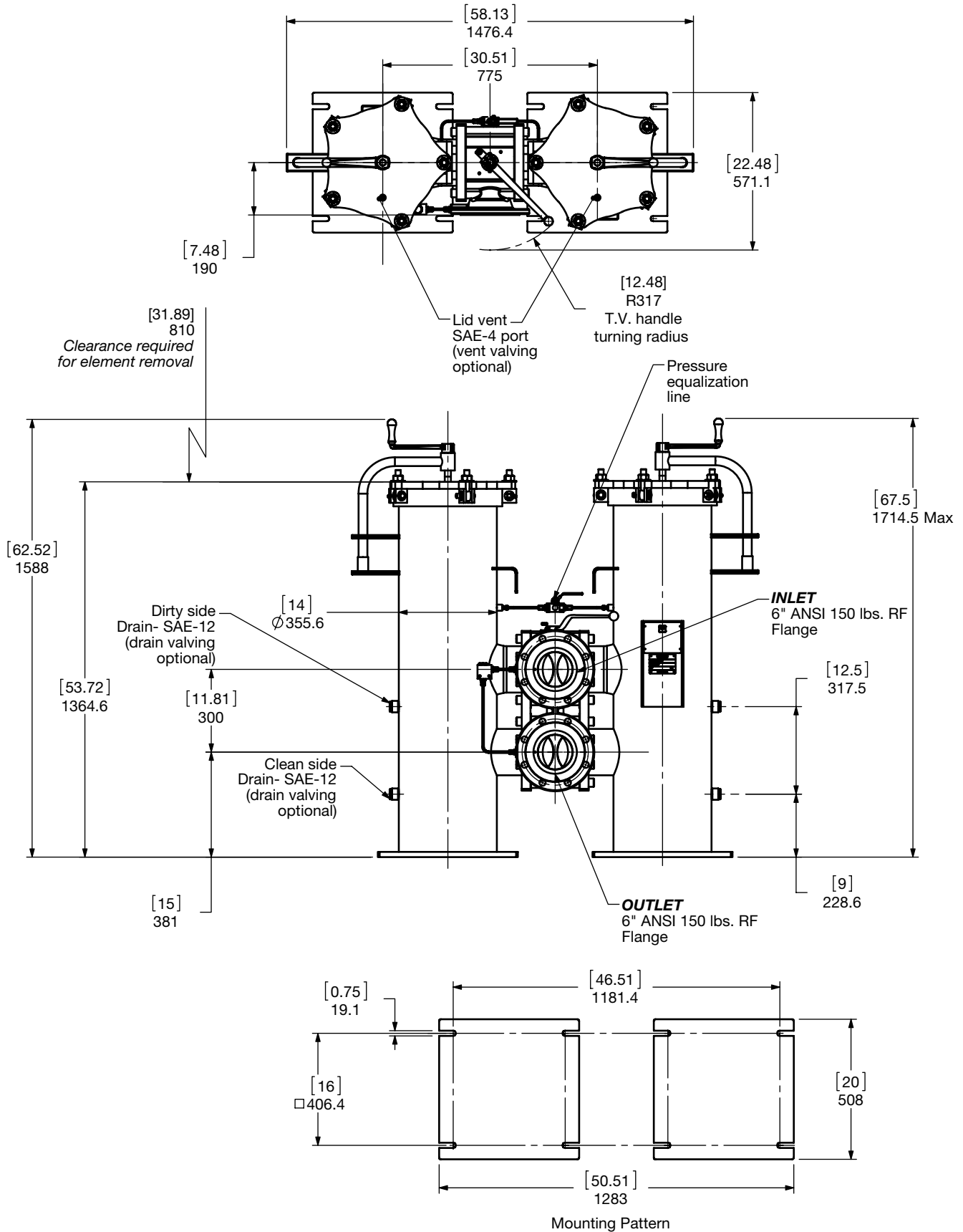


Size	2520	2523
Weight (lbs.)	700	700

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.

# SPECIAL ORDER FILTERS - LOW PRESSURE

Dimensions  
RFLDH 4020



<b>Size</b>	<b>4020</b>
<b>Weight (lbs.)</b>	<b>1500</b>

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:

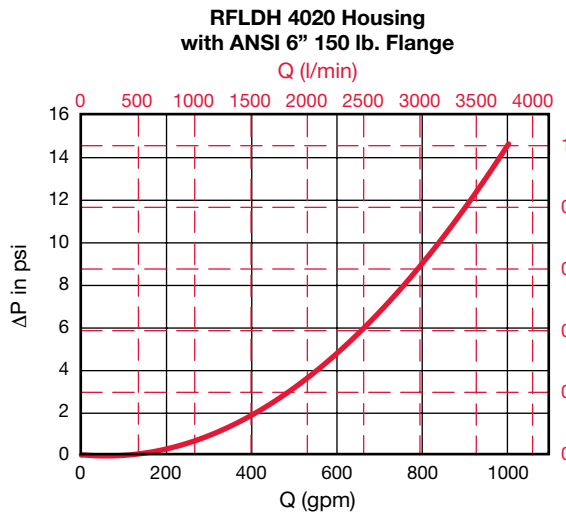
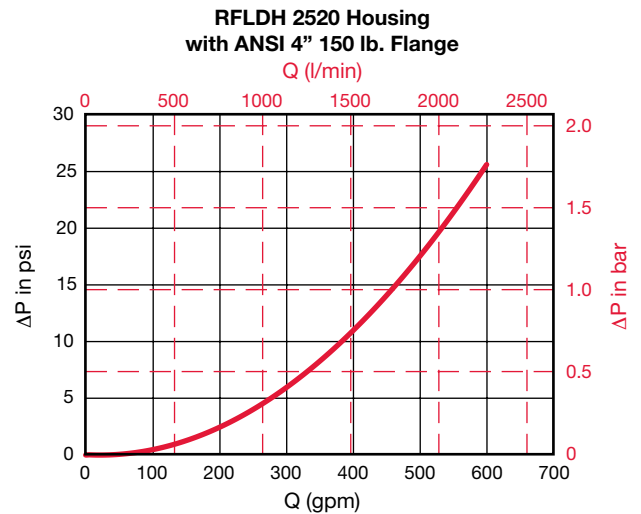
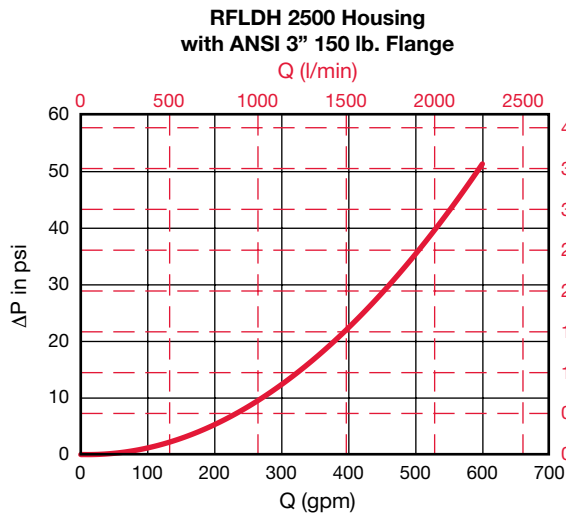
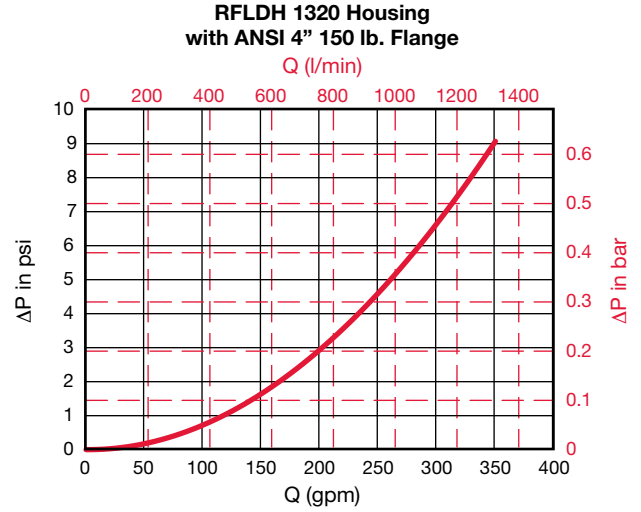
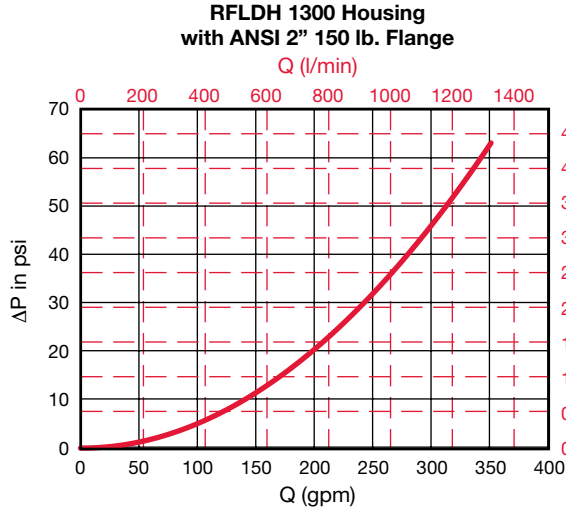
$$\text{Assembly } \Delta P = \text{Housing } \Delta P + \text{Element } \Delta P$$

### 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)





# SPECIAL ORDER FILTERS - LOW PRESSURE

## Required Element Per Housing

Housing Size	Element Size	Elements per Side
1300 / 1303	1300	1
1320 / 1323	2600	1
2500 / 2503	0850	3
2520 / 2523	1700	3
4020 / 4023	1700	5

## Element K Factors

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

(From Tables Below)

Optimicron Size	...R...ON					
	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm
0850 R XXX ON	0.152	0.072	0.055	0.032	0.024	0.02
1300 R XXX ON	0.094	0.04	0.032	0.019	0.018	0.012
1700 R XXX ON	0.074	0.035	0.029	0.015	0.014	0.01
2600 R XXX ON	0.046	0.02	0.016	0.01	0.009	0.006

ECONmicron Size	...R...ECON2			
	3 µm	5 µm	10 µm	20 µm
0850 R XXX ECON2	0.082	0.055	0.038	0.022
1300 R XXX ECON2	0.044	0.033	0.022	0.016
1700 R XXX ECON2	0.038	0.027	0.016	0.011
2600 R XXX ECON2	0.022	0.016	0.011	0.005

Betamicron/Aquamicron Size	...R...BN4AM	
	3 µm	10 µm
0850 R XXX BN4AM	0.154	0.049
1300 R XXX BN4AM	0.088	0.033
1700 R XXX BN4AM	0.071	0.027
2600 R XXX BN4AM	0.055	0.016

Aquamicron Size	...R...AM
	40 µm
0850 R 040 AM	0.040
1300 R 040 AM	0.026
1700 R 040 AM	0.020
2600 R 040 AM	0.013

Wire Mesh Size	...R...W/HC
	25, 50, 100, 200 µm
0850 R XXX W/HC	0.003
1300 R XXX W/HC	0.002
1700 R XXX W/HC	0.001
2600 R XXX W/HC	0.001

Polyester Size	...R...P/HC	
	10 µm	20 µm
0850 R XXX P/HC	0.007	0.003
1300 R XXX P/HC	0.004	0.002
1700 R XXX P/HC	0.003	0.002
2600 R XXX P/HC	0.002	0.001

All Element K Factors in psi / gpm.

