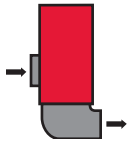


# LOW PRESSURE FILTERS

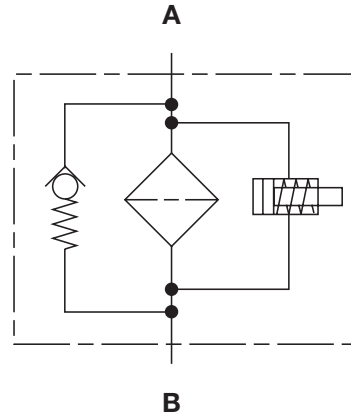
## RFL Cast Series

Inline Filters

360 psi • up to 350 gpm



### Hydraulic Symbol



### Features

- Models 851 and 1301 are made of ductile cast iron and consist of a two part filter housing with bolt-on cast iron lid. The two part construction makes it possible to arrange the inlet and outlet either one above the other on one side or, by turning the base part 180°, on opposite sides of the housing.
- Inlet/outlet ports for models 851 and 1301 comply with SAE 4-bolt flange Code 61 configuration.
- Clogging indicators have no external dynamic seal. High reliability is achieved and magnetic actuation eliminates a leak point.

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.

### Technical Specifications

<b>Mounting Method</b>	Support by means of pipe clamps
<b>Port Connection</b>	851 3" SAE DN 76 Code 61 Flange 1301 4" SAE DN 102 Code 61 Flange
<b>Flow Direction</b>	Inlet: Side    Outlet: Side
<b>Construction Materials</b>	Head, Lid, Elbow    Ductile iron
<b>Flow Capacity</b>	851 225 gpm (850 lpm) 1301 343 gpm (1300 lpm)
<b>Housing Pressure Rating</b>	Max. Allowable Working Pressure 360 psi (25 bar) Fatigue Pressure 360 psi (25 bar) Burst Pressure > 1440 psi (100 bar)
<b>Element Collapse Pressure Rating</b>	ON, W/HC 290 psid (20 bar) BN4AM, ECON2, 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%

### Applications



Automotive



Gearboxes



Industrial



Power Generation



Pulp & Paper



Shipbuilding



Steel / Heavy Industry

## Model Code

**RFL ON 851 D P 3 A 1 . X / V**

**Filter Type** \_\_\_\_\_  
RFL = Inline Filter

**Element Media** \_\_\_\_\_  
ON = Optimicron®                      XSX = Stat-X®  
BN/AM = Betamicron®/Aquamicron®  
ECON2 = ECOmicron®                      AM = Aquamicron®  
W/HC = Wire Mesh                      P/HC = Polyester

**Size** \_\_\_\_\_  
851  
1301

**Operating Pressure** \_\_\_\_\_  
D = 363 psi (25 bar)

**Type of Connection** \_\_\_\_\_  
N = SAE DN 76 3" Code 61 (size 851)  
P = SAE DN 102 4" Code 61 (size 1301) ] with metric threads

**Filtration Rating (microns)** \_\_\_\_\_  
1, 3, 5, 10, 15, 20 = ON                      3, 5, 10, 20 = XSX                      3, 10 = BN4AM  
40 = AM                      25, 50, 100, 200 = W/HC                      10, 20 = P/HC                      3, 5, 10, 20 = ECON2

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

**Type Code** \_\_\_\_\_  
1

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

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

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

**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)  
cRUus = Electrical Indicator with underwriter's approval  
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

## Replacement Element Model Code

**0850 R 010 ON / V B6**

**Size** \_\_\_\_\_  
0850, 1300

**Filtration Rating (micron)** \_\_\_\_\_  
1, 3, 5, 10, 15, 20 = ON  
3, 5, 10, 20 = XSX                      3, 10 = BN4AM  
3, 5, 10, 20 = ECON2                      40 = AM  
25, 50, 100, 200 = W/HC                      10, 20 = P/HC

**Element Media** \_\_\_\_\_  
ON, XSX, BN4AM, ECON2, AM, W/HC, P/HC

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

**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)  
SFREE = (same as above)  
SO376 = (same as above)

## Clogging Indicator Model Code

**VM 2 B . X /**

**Indicator Prefix** \_\_\_\_\_  
VM = G 1/2 3000 psi

**Trip Pressure** \_\_\_\_\_  
2 = 29 psid (2 bar) ] (optional)  
5 = 72 psid (5 bar)

**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)  
EPR = Ethylene propylene rubber (EPR)

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

**Thermal Lockout (VM type C, D, J, J4 only)** \_\_\_\_\_  
T100 = Lockout below 100°F

**Underwriter's Approval (VM type C, D, J, J4 only)** \_\_\_\_\_  
cRUus = Electrical Indicator with underwriter's approval

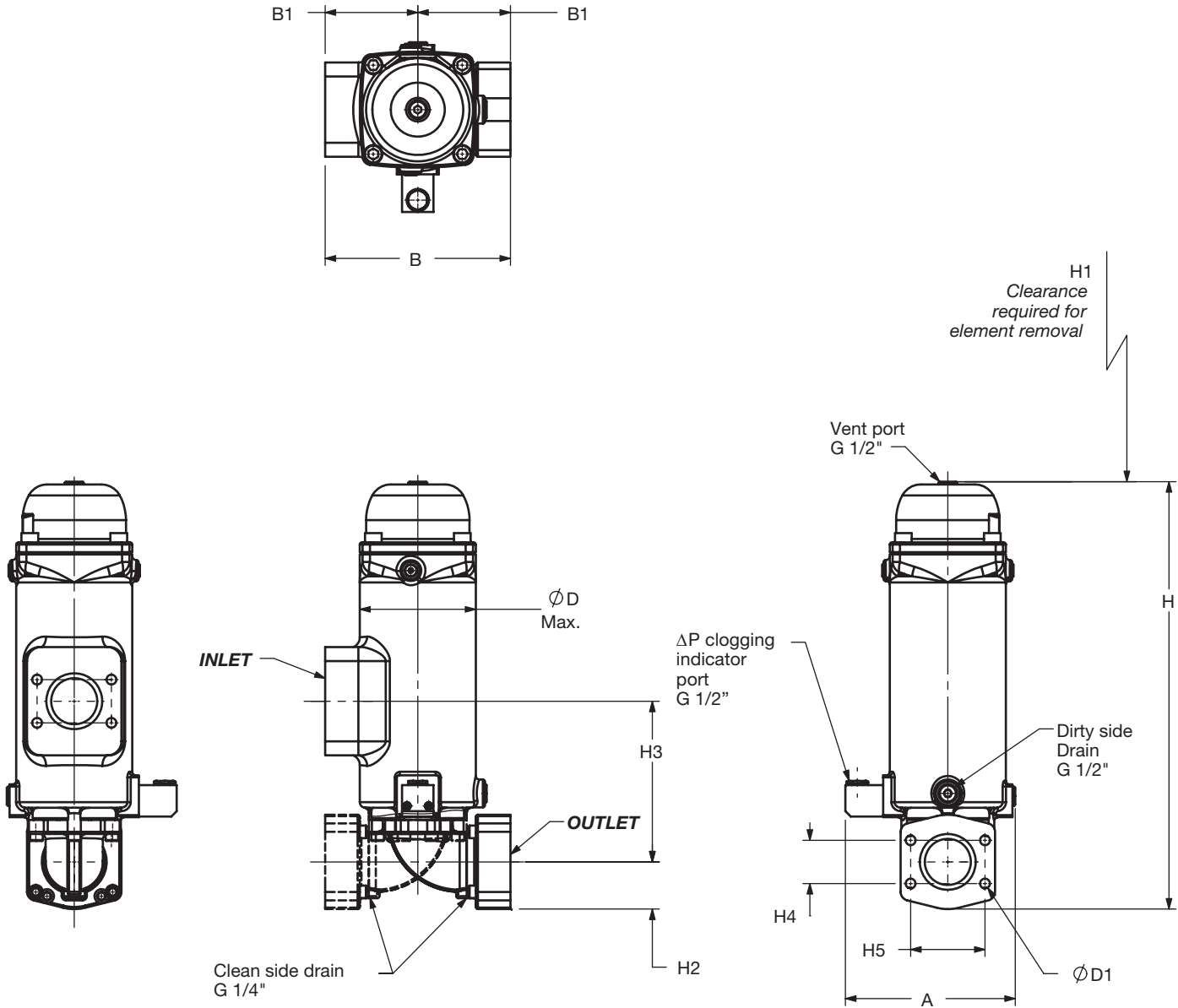
(For additional details and options, see Clogging Indicators section.)

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

# LOW PRESSURE FILTERS

## Dimensions

### RFL Cast 851-1301



Size	A	B	B1	H	H1	H2	H3	H4	H5	D	D1	Weight (lbs)
RFL 851	[7.56] 192	[8.78] 266	[5.23] 133	[24.09] 612	[16.54] 420	[2.66] 67.5	[9.05] 230	[2.44] 61.9	[4.19] 106.4	[6.77] 172	M16	84.9
RFL 1301	[8.78] 223	[11.26] 286	[5.63] 143	[27.99] 711	[19.69] 500	[3.05] 77.5	[9.84] 250	[3.06] 77.8	[5.13] 130.2	[8.66] 220	M16	122.4

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:

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

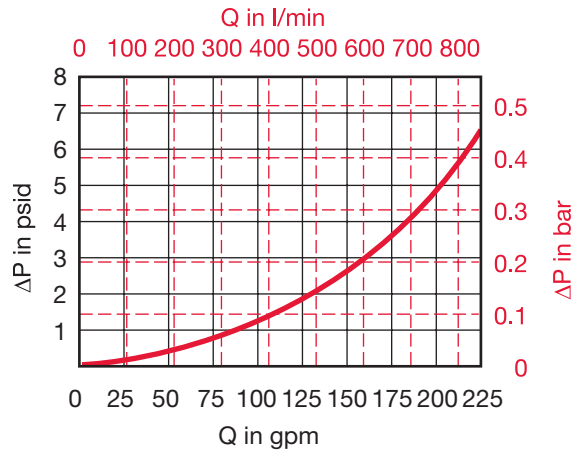
### Housing Curve:

Pressure loss through housing is as follows:

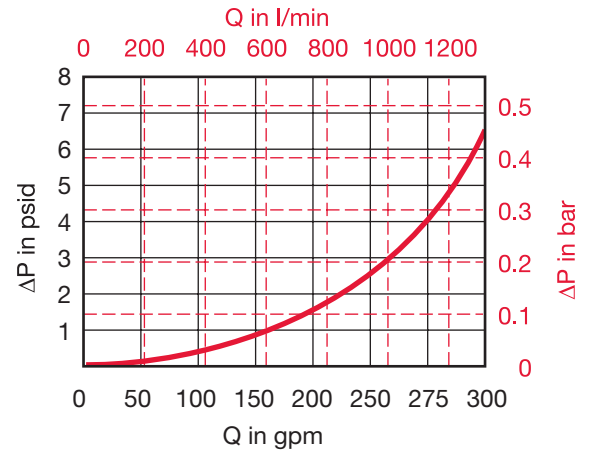
$$\text{Housing } \Delta P = \text{Housing Curve } \Delta P \times \frac{\text{Actual Specific Gravity}}{0.86}$$

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

### RFL 851 HOUSING



### RFL 1301 HOUSING



## 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	...R...ON					
Size	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

Stat-X	...R...XSX			
Size	3 μm	5 μm	10 μm	20 μm
0850 R XXX XSX	0.072	0.055	0.032	0.02
1300 R XXX XSX	0.04	0.032	0.019	0.012

ECOMICRON	...R...ECON2			
Size	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

Betamicron/Aquamicron	...R...BN4AM	
Size	3 μm	10 μm
0850 R XXX BN4AM	0.154	0.049
1300 R XXX BN4AM	0.088	0.033

Aquamicron	...R...AM
Size	40 μm
0850 R 040 AM	0.040
1300 R 040 AM	0.026

Wire Screen	...R...W/HC
Size	25, 50, 100, 200 μm
0850 R XXX W/HC	0.003
1300 R XXX W/HC	0.002

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

All Element K Factors in psi / gpm.