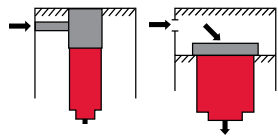


## RFM...S & RFM...Set Series

### Inside Tank Return Line Filters

145 psi • up to 132 gpm



RFM...S



RFM...Set



Typical Installation of Both Models

### Features

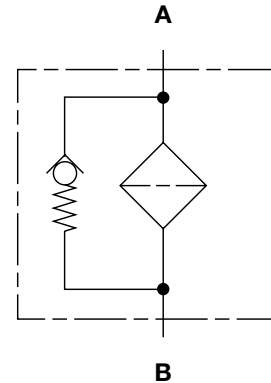
- Unique design allows filter to be installed completely inside of the reservoir tank. This saves space, protects the filter, reduces leak points and reduces overall installation cost.
- Lightweight unit requiring no filter head reduces pressure drop while decreasing cost.
- Excellent option for low overhead clearance applications.
- Allows pre-filtration of new make-up oil assuring cleanliness of system.
- Contamination Basket prevents filtered contamination from re-entering the tank during element changeout on 330 & 500 size models.
- Simplifies element changeout procedure in the field.
- RFM Set configuration (tank plenum) allows for multiple returns to enter plenum without manifolding.

### Installation

**RFM...SET:** Inside Tank Filters are installed into a separate chamber (see *tank cutaway to the right*) built into the reservoir tank via the filter ring and 4 bolts. More than one filter may be installed in the chamber if required for capacity. This procedure will require a hole to be cut into the top of the reservoir tank and an access cover fastened to the tank for each filter installed. The inlet piping for return should be connected through the tank wall into the separate chamber. A clip installed on the filter ring holds the element in place during filtration operations, and facilitates easy removal for element change out. A static pressure clogging indicator, to warn of high upstream pressure (*element clogged*), can be attached to the access cover. For additional information, consult factory.

**RFM...S:** Inside Tank Filters are installed to the top of the tank by welding the inner chamber to the tank cover (see *tank cutaway to the right*). This procedure will require a hole to be cut into the top of the reservoir tank and an access cover fastened to the tank. A smaller hole must be cut somewhere in the tank for the return line piping to pass through. The hole located in the side of the inner chamber must be directed towards the return line piping. The inlet piping for return should then be welded through the tank wall and to the inner chamber. The spring located between the element and the access cover provides force to hold element in place during filter operation. A static pressure indicator to warn of high upstream pressure, and if element is clogged can be attached to the access cover. Multiple filters can be installed in the tank. For additional installation information, consult factory.

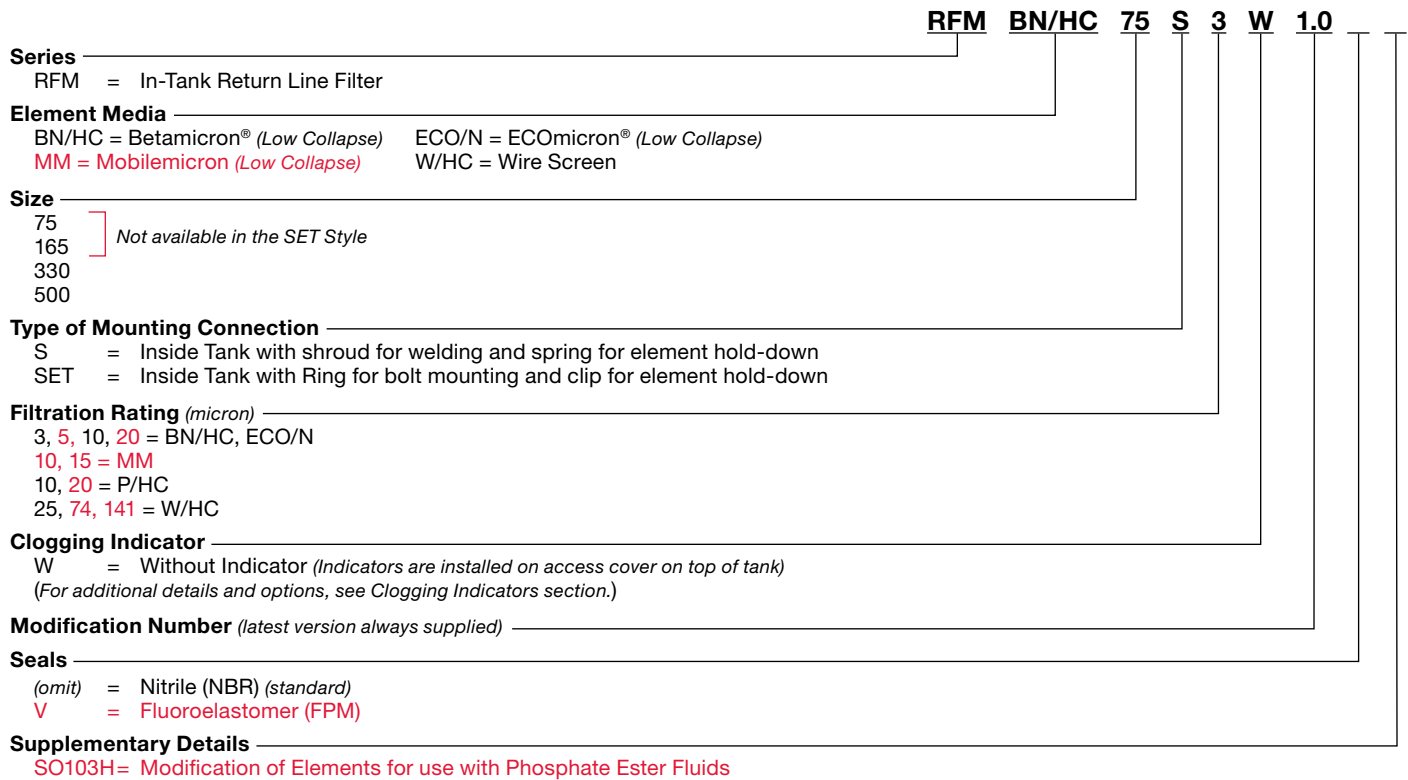
### Hydraulic Symbol



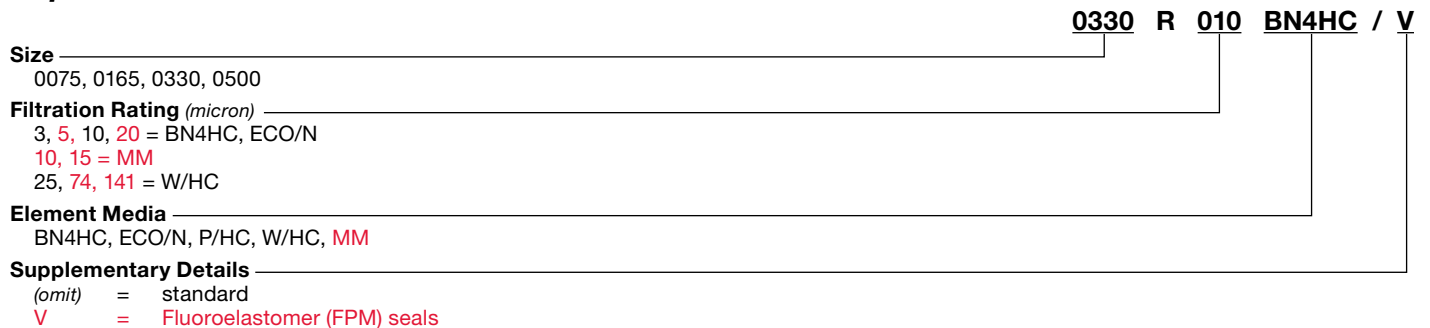
### Technical Details

<b>Mounting Method</b>	See Installation at left	
<b>Port Connection</b>	Outlet	
75/165/185	1.26" Smooth Port	
330/500	2" NPT	
<b>Flow Direction</b>	Inlet: Side	Outlet: Bottom
<b>Construction Materials</b>		
Chamber	Steel (75/165/185)	
Bowl	Plastic	
Ring	Aluminum (330/500)	
<b>Flow Capacity</b>		
75	20 gpm (75 lpm)	
165	43 gpm (165 lpm)	
185	49 gpm (185 lpm)	
330	87 gpm (330 lpm)	
500	132 gpm (500 lpm)	
<b>Housing Pressure Rating</b>		
Max. Operating Pressure	145 psi (10 bar)	
Proof Pressure	218 psi (15 bar)	
Fatigue Pressure	145 psi (10 bar)	
Burst Pressure	> 580 psi (40 bar)	
<b>Element Collapse Pressure Rating</b>		
BN/HC, W/HC	290 psid (20 bar)	
ECO/N, BN/AM, P/HC, AM	145 psid (10 bar)	
<b>Fluid Temperature Range</b>		
-22° to 250°F (-30° to 121°C)		
<b>Fluid Compatibility</b>		
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.		
<b>Bypass Valve Cracking Pressure</b>		
ΔP = 43 psid (3 bar) +10%		
ΔP = 87 psid (6 bar) +10%		

## Model Code



## Replacement Element Model Code

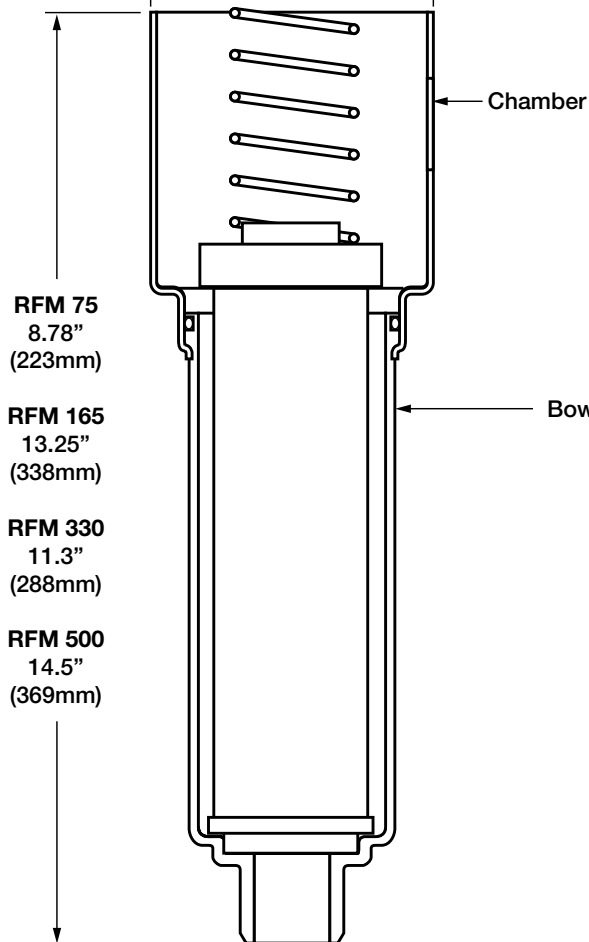


## Dimensions

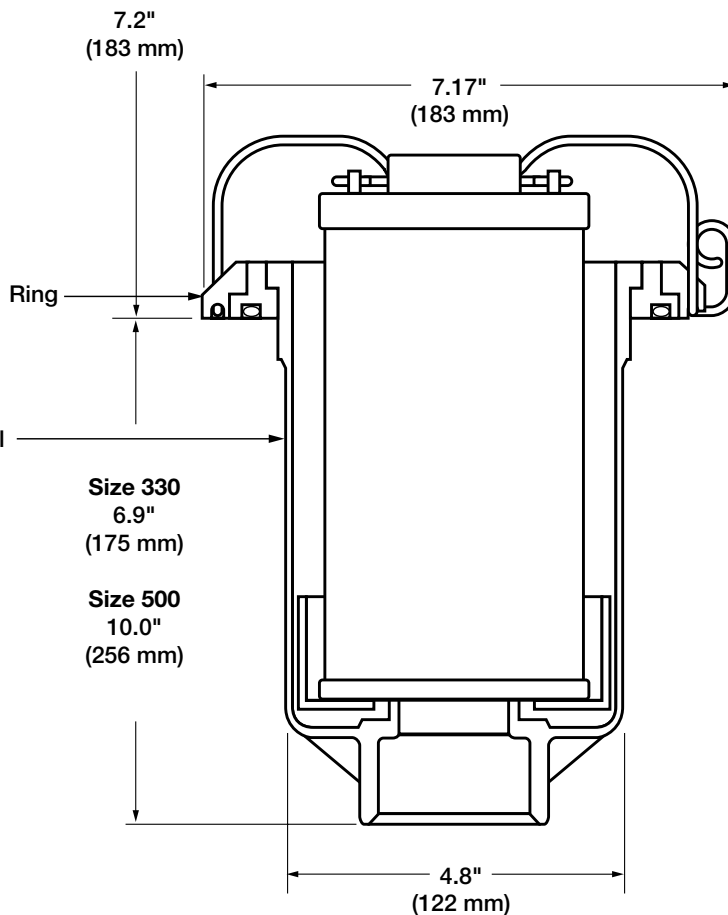
### RFM...S

RFM 75 / 165  
 ø 4.0"  
 (102.5mm)

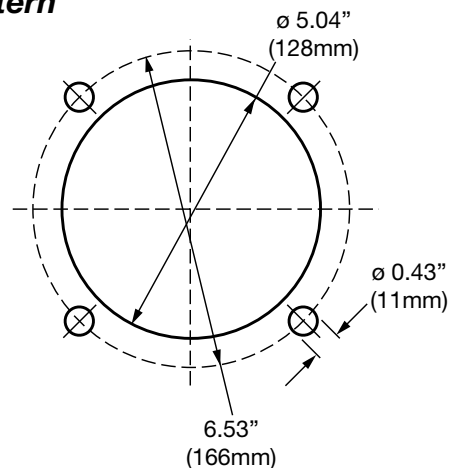
RFM 330 / 500  
 ø 6.10"  
 (155mm)



### RFM...Set



### Mounting Pattern



Size	75 S	165 S	330 S	500 S	330 Set	500 Set
Weight (lbs.)	1.81	2.24	4.42	4.88	4.41	4.85

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:

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

### 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 section on page 19)

## 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)

Size	...R...BN4HC (Betamicon® Low Collapse)			
	3 µm	5 µm	10 µm	20 µm
0075	1.209	0.780	0.445	0.241
0165	0.616	0.430	0.245	0.133
0330	0.232	0.150	0.093	0.066
0500	0.162	0.104	0.069	0.044

Size	...R...ECO/N			
	3 µm	5 µm	10 µm	20 µm
0165	0.674	0.369	0.321	0.220
0330	0.228	0.156	0.135	-

Size	...R...P/HC (Paper)	
	10, 20 µm	
0075	0.156	
0165	0.086	
0330	0.037	
0500	0.024	

Size	...R...W/HC (Wire Screen)	
	25, 50, 74, 100, 149, 200 µm	
0075	0.043	
0165	0.020	
0330	0.010	
0500	0.007	

Size	...R...MM	
	10 µm	15 µm
0075	0.265	0.166
0165	0.146	0.091
0330	0.078	0.049
0500	0.052	0.032

All Element K Factors in psi / gpm.