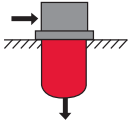


RFM Series

In-Tank Return Line Filters

145 psi • up to 224 gpm



Features

- The compact and lightweight design make RFM filters especially suitable for mobile applications.
- RFM filters are constructed of polyamide plastic housing and lid.
- RFM 90/150/210/270 drop in replacement for "Tank Topper" filters.
- Sizes 50 - 851 aluminum alloy is water tolerant - anodization is not required for water based fluids (HWBF).
- The filter bowl on models 50 - 270 also serves as a contamination basket - removed to change element.
- Models 330, 500, 661, and 851 have filter elements equipped with separate, reusable contamination baskets.
- Sizes 75/90/150/165/185 available with 4- or 2-bolt tank flange.
- Second inlet optional port available for sizes 75, 165, 185 only with 4-bolt mounting head.
- Sizes 975 & 1100 added for increased flow capacities
- Sizes 50, 975 and 1100 utilize separate bypass assemblies
- Size 50 only available with BN4HC elements

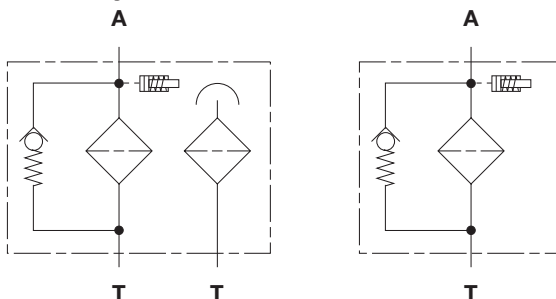
Note: This filter is configured with anR.... type (return/low pressure) element, so if the filter requires a bypass, the bypass is located in the closed end cap of the cartridge element. (Exception - sizes 50, 975, 1100)

Technical Specifications

Mounting Method			
75/90/150/165/185	2 mounting holes - filter housing		
50/75/90/150/165/185/210/270/ 330/500/661/851/975/1100	4 mounting holes - filter housing		
Port Connections		Inlet / Outlet	
50	SAE-8 / 0.9"		
90/150	SAE-12 / 1"		
75/165/185	SAE-16 / 1.26" Smooth Port		
210/270	SAE-20 / Open Bottom		
330/500	SAE-24 / 2" NPT		
	1 1/2" SAE Flange, Code 61 / 2" NPT		
661/851	2 1/2" SAE Flange, Code 61 / G 2		
975/1100	1/2" BSPP		
	2" SAE Straight Thread / 2" NPT		
	2 1/2" NPT Threaded / 2" NPT M		
	2 1/2" SAE Code 61 Flange / 2" NPT M		
Direction of Flow		Side inlet and bottom outlet.	
Mat. of Construc.		Head	Bowl
50/90/150/75/165/185	Aluminum	Polyamide	Polyamide
210/270	Aluminum	Steel	Polyamide
330/500/661/851	Aluminum	Polyamide	Aluminum
975/1100	Aluminum	Steel	Steel
Flow Capacity			
50 - 13 gpm (50 lpm)	270 - 71 gpm (270 lpm)		
75 - 20 gpm (75 lpm)	330 - 87 gpm (330 lpm)		
90 - 24 gpm (90 lpm)	500 - 132 gpm (500 lpm)		
150 - 40 gpm (150 lpm)	661 - 174 gpm (660 lpm)		
165 - 43 gpm (165 lpm)	851 - 225 gpm (850 lpm)		
185 - 49 gpm (185 lpm)	975 - 258 gpm (950 lpm)		
210 - 55 gpm (210 lpm)	1100 - 300 gpm (1100 lpm)		
Housing Pressure Rating			
Max. Allowable Working Pressure*	145 psi (10 bar),		
	101.5 psi (7 bar) (Sizes 975 & 1100)		
Fatigue Pressure	145 psi (10 bar) @ 1 million cycles		
Burst Pressure	75-500	>580 psi (40 bar)	
	50, 661/851	536 psi (37 bar)	
	975/1100	Consult Factory	
Element Collapse Pressure Rating			
BN4HC (size 50, 975 & 1100 only)	145 psid (10 bar)		
ON (size 50-851 only), W/HC	290 psid (20 bar)		
ECON2, BN4AM, AM, P/HC, MM	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			
P = 20 psi (1.4 bar) - 10%			
P = 29 psi (2 bar) -10% (standard)			
P = 72 psi (5 bar) -10% (optional)			
Bypass Valve Cracking Pressure			
ΔP = 43 psid (3 bar) +10% (Standard - All sizes except 50, 975, 1100)			
ΔP = 87 psid (6 bar) +10% (Optional - Sizes 50, 975 & 1100 not available)			
ΔP = 25 psid (1.7 bar) +10% (Standard for Sizes 50, 975 & 1100)			

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

Hydraulic Symbol



Model Code

RFM ON 330 B F F 3 D 1 . X / 12 - V - - L24

Filter Type _____
RFM = In-Tank Return Line Filter

Element Media _____
ON = Optimicron® BN/HC = Betamicon® (Sizes 50, 975, 1100 only)
BN/AM = Betamicon®/Aquamicron® (Sizes 330 to 851 only)
ECON2 = ECOmicron® (Not for sizes 50, 75, 210, 270)
AM = Aquamicron® (Sizes 330 to 851 only)
W/HC = Wire Mesh (Sizes 75 to 851) P/HC = Polyester (Sizes 330 to 851 only)
MM = Mobilemicron® (Sizes 75 to 851)

Size _____
50, 75, 90, 150, 165, 185, 210, 270, 330, 500, 661, 851, 975, 1100

Working Pressure _____
B = 145 psi (10 bar) V = 101.5 psi (7 bar) (975 & 1100 Standard* - Note previous page)

Optional Second Inlet Connection _____
(omit) = no second port M = 2 1/2" SAE Flange Code 61 (sz. 661, 851, 975 & 1100 only)
D = 1" Threaded (SAE-16) (sz. 75, 165, 185)
F = 1 1/2" Threaded (SAE-24) (sz. 330, 500 only) N = 2 1/2" NPT Threads (sz. 975, 1100 only)
G = 2" Threaded Port (sz. 975, 1100 only) V = 2 x 1" (SAE-16) (sz. 210, 270 only)
K = 1 1/2" SAE Flange Code 61 (sz. 330, 500 only)

Inlet Connection/Port Size (1 Inlet) _____
B = 1/2" Threaded (SAE-8) (sz. 50 only) N = 2 1/2" NPT Threads (sz. 975, 1100 only)
C = 3/4" Threaded (SAE-12) (sz. 90, 150 only) Z = Customer Specific
D = 1" Threaded (SAE-16) (sz. 75, 165 & 185 only)
E = 1 1/4" Threaded (SAE-20) (sz. 210, 270 only)
F = 1 1/2" Threaded (SAE-24) (sz. 210, 270, 330, & 500 only)
G = 2" Threaded Port (sz. 975 & 1100 only)
K = 1 1/2" SAE Flange Code 61 (sz. 330, 500 only)
M = 2 1/2" SAE Flange Code 61 (sz. 661, 851, 975 & 1100 only)

Filtration Rating (microns) _____
1, 3, 5, 10, **15, 20** = ON 3, 5, 10, 20 = BN/HC 3, 10 = BN/AM 3, 5, 10, 20 = ECON2
40 = AM 25, 74, 149 = W/HC 10, 20 = P/HC 10, 15 = MM

Type of Static Clogging Indicator _____
A, B, BM, C, D, E, F, FD (Others available upon request)

Type Number _____
0 = no indicator, no ports 1-3 = clogging indicator positions (see chart)

Modification Number (latest version always supplied) _____

Inlet Port Configuration _____
0 = BSPP Straight Thread Ports 3 = NPT Ports (sizes 975, 1100 only)
12 = SAE Straight Thread O-Ring Boss Ports (sz. 50-500, 975, 1100) 16 = SAE Flange Code 61 (sz. 330-851, 975, 1100)

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

Bypass Valve _____
(omit) = 43 psid (3 bar) (standard) B1.7 = 25 psid (1.7 bar) (50, 975 & 1100 only setting available for bypass)
B1 = 14.5 psid (1 bar) lube 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 ON and W/HC elements for Skydrol or HYJET phosphate ester fluids
L24, L48, L110, L220 = Lamp for D-type clogging indicator (LXX, XX = voltage)
SO150H = Anodized for high water based fluids, phosphate esters and skydrol fluids (sz. 975 & 1100 only)
T = Filter Breather (sz. 75, 90, 150, 165, 185, 210, 270 only) - (includes oil separator on 2 bolt versions sizes 75, 165, 185 only)
C = Outlet check valves (sizes 975, 1100 only)
DTxx = Down tube (xx length in inches - up to 12 inches) 4L = 4 Bolt mounting flange (sizes 90-185)
DSxx = Dip stick (xx length in inches) 2MO = Indicator with Deutsch Connector (FD indicator only)
D = Diffuser (sizes 75, 165, 185 only) SFREE = Element specially designed to minimize electrostatic charge generation

Replacement Element Model Code

0330 R 003 ON / V B6

Size _____
0050, 0075, 0090, 0150, 0165, 0185, 0210, 0270, 0330, 0500, 0660, 0850, 0975, 1100

Filtration Rating (micron) _____
1, 3, 5, 10, **15, 20** = ON
3, 5, 10, 20 = BN4HC (sz. 50, 975, 1100 only)
3, 10 = BN4AM 3, 5, 10, 20 = ECON2
40 = AM 25, 74, 149 = W/HC
10, 20 = P/HC 10, 15 = MM

Element Media _____
ON, BN4HC, BN4AM, ECON2, **AM**, W/HC, P/HC, **MM**

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)
B1.7 = 25 psid (1.7 bar) B6 = 87 psid (6 bar)
KB = no bypass

Supplementary Details _____
SO263 = (same as above) SFREE = (same as above)

Clogging Indicator Model Code

VR 2 D . X / V

Indicator Prefix _____
VR = Return Filters (sizes 330 to 851)
VMF = Mobile Filters (sizes 75 to 270)

Trip Pressure _____
1.4 = 20 psid (1.4 bar) 2 = 29 psid (2 bar)
5 = 72 psid (5 bar) (optional)

Type of Indicator _____
A = No indicator, plugged port
BM = Pop-up indicator (manual reset)
C = Electric switch - SPDT
E = Visual pressure gauge
F = Electric pressure switch
FD = Electric pressure switch w/Deutsch Connector

Modification Number _____

Supplementary Details _____
2M0 = Deutsch Connector (male)

Seals _____
(omit) = Nitrile rubber (NBR) (standard)
V = Fluorocarbon elastomer (FKM)
EPR = Ethylene propylene rubber (EPR)
(For additional details and options, see Section G - Clogging Indicators.)