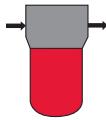


HIGH PRESSURE FILTERS

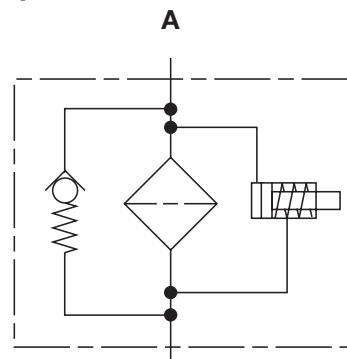
MFM Series

Inline Filters

4060 PSI • up to 25 GPM



Hydraulic Symbol



Features

- Because of their efficient design and construction, MFM filters are considered a cost effective solution for new equipment, or as a replacement for filters already specified on existing equipment.
- The MFM filter is available in 4 sizes comprised of four different bowl and element lengths. The models 35, 55, 75, and 95, provide maximum flow rates of 10, 18, 20, and 25 GPM respectively.
- A quick-response bypass valve located in filter head protects against high differential pressures caused by cold startups, flow surges and pressure spikes.
- The high bypass pressure setting (100 psid) minimizes the possibility of contamination due to premature bypassing.
- Filter materials are compatible with all mineral, lubricating oils, and commonly used fire retardant fluids per ISO 2943.
- Fatigue pressure rating equals maximum allowable working pressure rating.

Applications



Agricultural



Automotive



Construction



Gearboxes



Industrial



Commercial
Municipal

Technical Specifications

Mounting Method	4 mounting holes - filter head
Port Connection	SAE-12, 3/4" BSPP
Flow Direction	Inlet: Side Outlet: Side (opposite each other)
Construction Materials	
Head	Ductile iron
Bowl	Steel
Flow Capacity	
35	10 gpm (35 lpm)
55	18 gpm (68 lpm)
75	20 gpm (76 lpm)
95	25 gpm (95 lpm)
Housing Pressure Rating	
Max. Allowable Working Pressure	4060 psi (280 bar)
Fatigue Pressure	4060 psi (280 bar) @ 1 million cycles
Burst Pressure	4641 psi (320 bar) @ 100,000 cycles
13,920 psi (960 bar)	
Element Collapse Pressure Rating	
ON	290 psid (20 bar)
Fluid Temperature Range	
14°F to 212°F (-10°C to 100°C)	
Consult HYDAC for applications operating below 14°F (-10°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	
$\Delta P = 72 \text{ psid (5 bar)} + 10\%$	
Bypass Valve Cracking Pressure	
$\Delta P = 50.75 \text{ psid (3.5 bar)} + 10\% \text{ (optional)}$	
$\Delta P = 100 \text{ psid (7 bar)} + 10\% \text{ (standard)}$	

Model Code

Filter Type

MFM = In-Line High Pressure Filter

Element Media

ON = Optimicron® (Low Collapse)

Size

35	=	10 gpm
55	=	18 gpm
75	=	20 gpm
95	=	25 gpm

Operating Pressure

O = 4000 psi (280 bar)

Type of Connection

I	=	3/4" Threaded SAE 12 (1-1/16-12UN-2B)
H	=	3/4" Threaded G 3/4 (BSP)

(Other connections available on request)

Filtration Rating (microns)

1, 3, 5, 10, 15, 20 = ON

Type of Clogging Indicator

A, B, BM, C, D (Others available upon request, see Clogging Indicators section.)

Type Number

4	=	Indicator port on top of head - 4 mounting holes (standard)
3	=	Indicator port on side of head - 3 mounting holes

Type Modification Number (latest version always supplied)

Seals

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

Bypass Valve

B3.5	=	50.75 psid (3.5 bar) - Optional
B7	=	101.5 psid (7 bar) - Standard

Supplementary Details

W	=	"VD..." indicator modified with a brass piston for use with high water based emulsions/solutions (HFA) & (HFC)
L24, L48, L110, L220	=	Lamp for D-type clogging indicator (LXX, XX = voltage)

LED = 2 LEDs up to a voltage of 24 Volt

T100 = Indicator Thermal Lockout, 100°F (C and D indicators only)

SFREE = Element specially designed to minimize electrostatic charge generation

cRUus = Electrical Indicator with underwriter's recognition

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

0035 D 010 ON / V

Size

0035, 0055, 0075, 0095

Filtration Rating (micron)

1, 3, 5, 10, 15, 20 = ON

Element Media

ON = Optimicron®

Seals

(omit) = Nitrile rubber (NBR) (standard)

V = Fluorocarbon elastomer (FKM)

Supplementary Details

SFREE = (same as above)

SO376 = (same as above)

SO882 = (same as above)

Clogging Indicator Model Code

VD 5 C . X / V

Indicator Prefix

VD = G 1/2 6000 psi

Trip Pressure

2 = 29 psid (2 bar) (option)

5 = 72 psid (5 bar) (standard)

Type of Indicator

A = no indicator, plugged port

B = Pop-up indicator (auto reset)
- top mount only

BM = Pop-up indicator (manual reset)

C = Electric switch - SPDT

D = Electric switch and LED light - SPDT

Modification Number

Supplementary Details

Seals

(omit) = Nitrile rubber (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

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

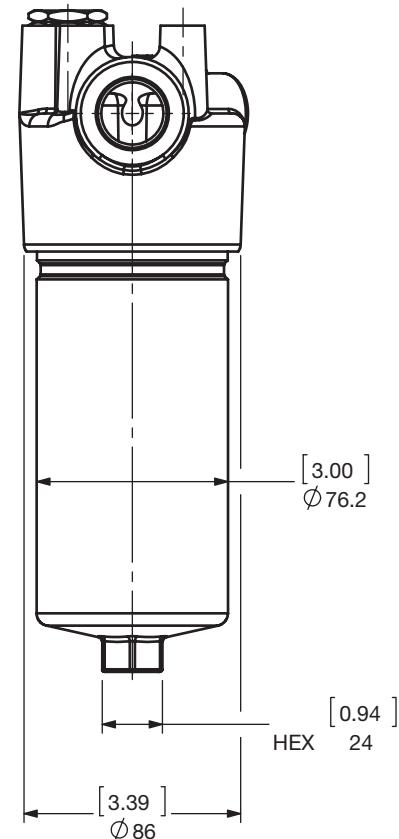
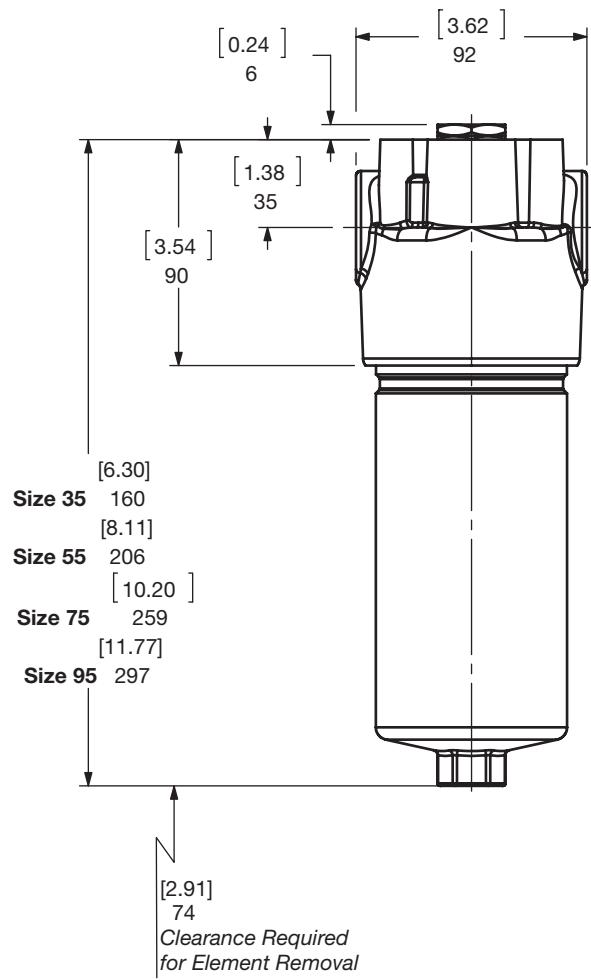
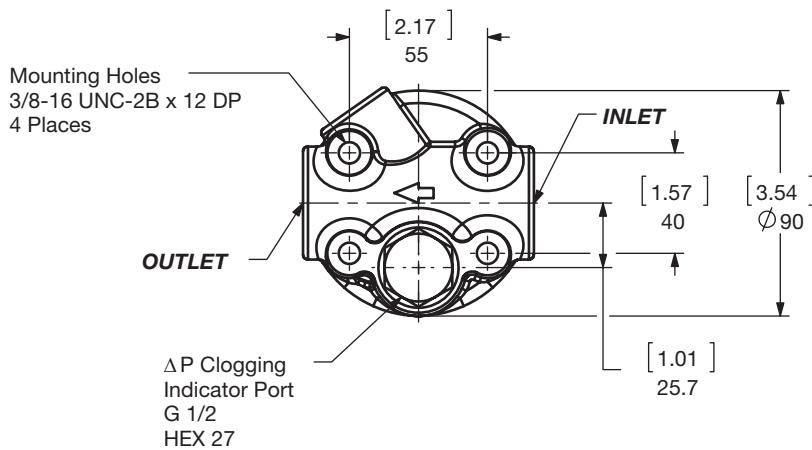
(For additional details and options, see Clogging Indicators section.)

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

HIGH PRESSURE FILTERS

Dimensions

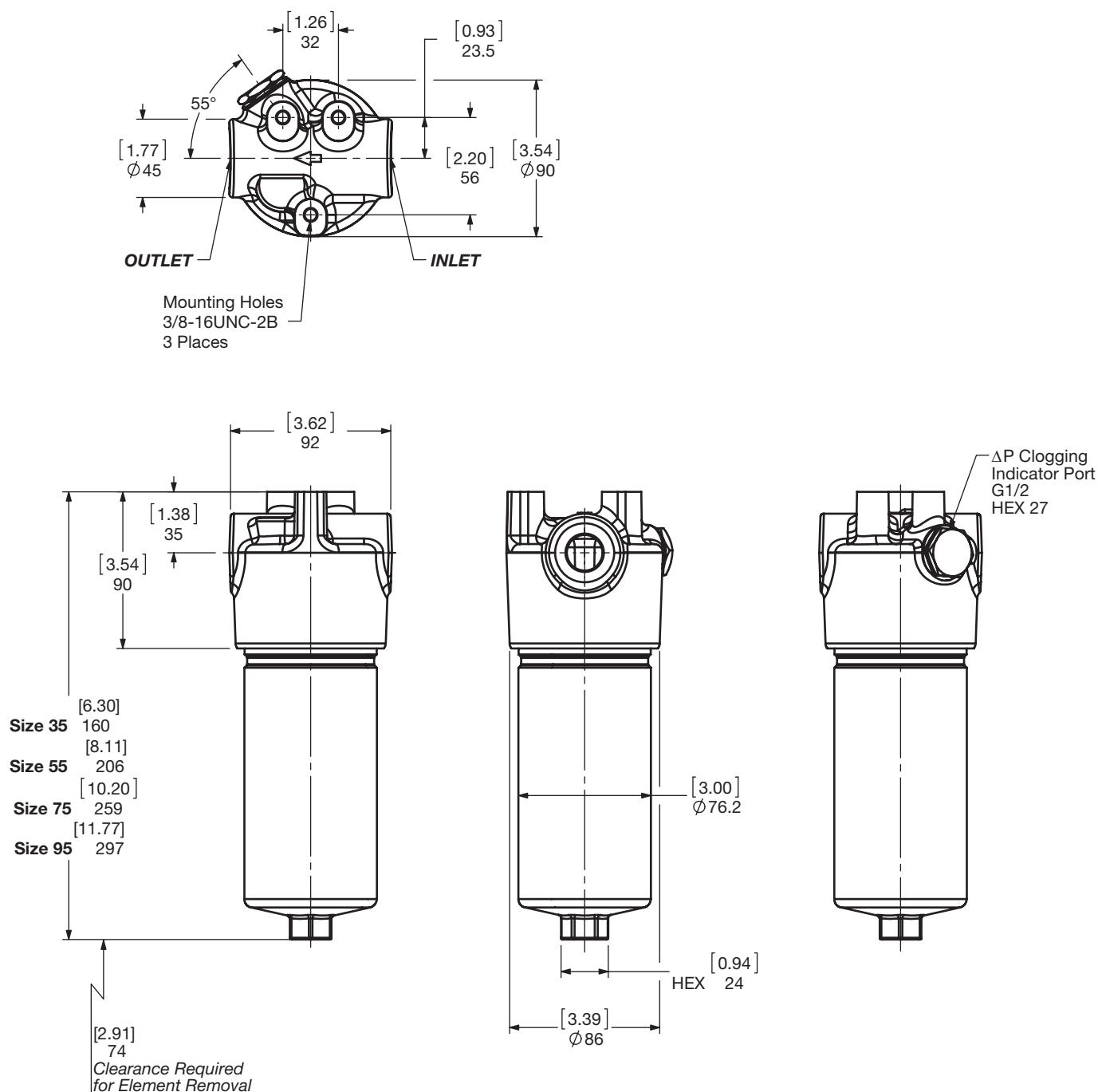
MFM 4.X Version (Standard)



Size	35	55	75	95
Weight (lbs.)	8.2	9.3	10.4	11.3

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
MFM 3.X Version



Size	35	55	75	95
Weight (lbs.)	8.2	9.3	10.4	11.3

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.

HIGH PRESSURE FILTERS

Sizing Information

Total pressure loss through the filter is as follows:

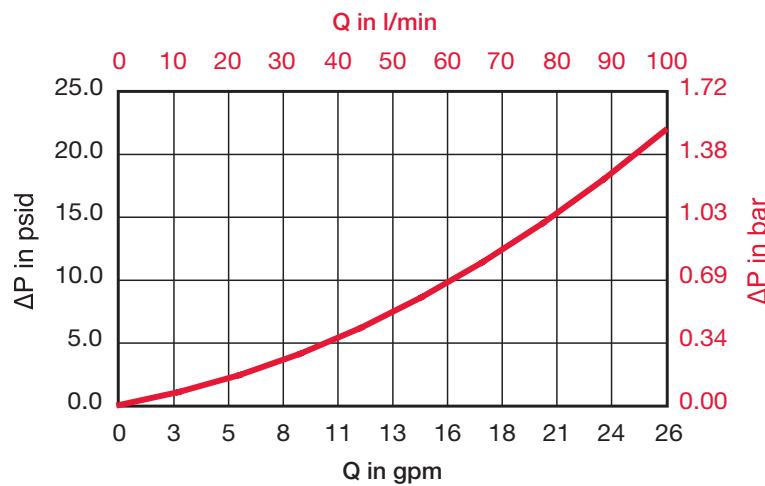
Assembly ΔP = Housing ΔP + Element ΔP

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)



Element K Factors

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

(From Tables Below)

Optimicron	...D...ON (Pressure Elements)					
	1 μm	3 μm	5 μm	10 μm	15 μm	20 μm
0035 D XXX ON	2.755	1.169	0.938	0.752	0.549	0.408
0055 D XXX ON	1.427	0.675	0.543	0.434	0.284	0.211
0075 D XXX ON	0.916	0.461	0.37	0.296	0.183	0.136
0095 D XXX ON	0.724	0.37	0.296	0.238	0.144	0.105

All Element K Factors in psi / gpm.

Notes

