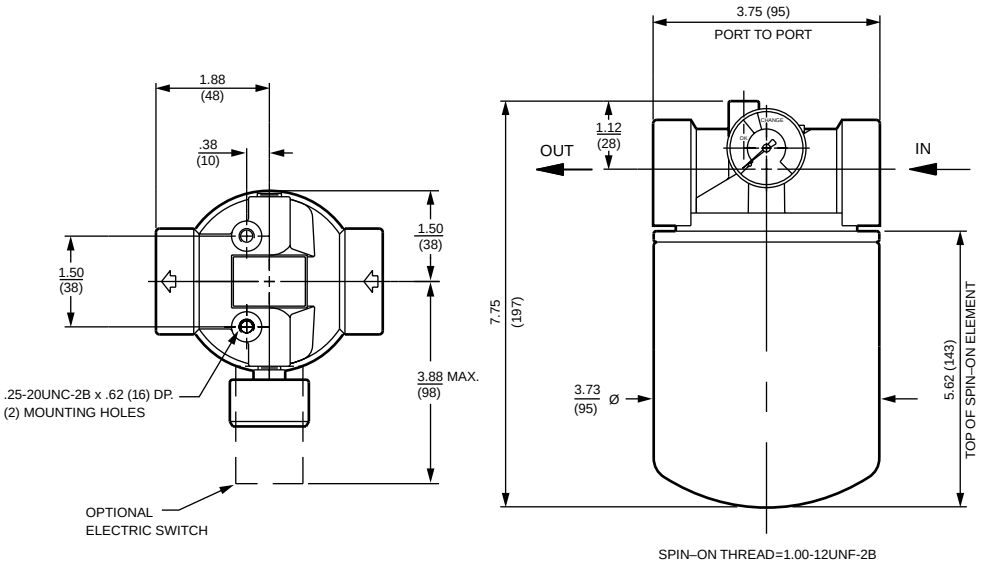
PAF1 Spin-On Filter

SAME DAY SHIPMENT MODEL AVAILABLE!

20 gpm *75 L/min*

100 psi *7 bar*



Metric dimensions in ( ).
Model No. of filter in photograph is PAF16P10S.

Filter Housing Specifications

Flow Rating:	Up to 20 gpm (75 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	150 psi (10 bar)
Rated Fatigue Pressure:	Contact factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2 bar) Full Flow: 36 psi (2 bar)
Porting Head & Cap:	Die Cast Aluminum
Element Case:	Steel
Weight of PAF1-6P:	1.8 lbs. (0.8 kg)
Element Change Clearance:	2.50" (65 mm)

Element Performance Information

Element	Absolute Rating Per ISO 4572/NFPA T3.10.8.8 $\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	Abs. Rating wrt ISO 16889 $\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$	Dirt Holding Capacity gm
P10	15.5	16.2	18.0	N/A	N/A	37
PZ10	7.4	8.2	10.0	10.0	12.7	N/A
PZ25	18.0	20.0	22.5	19.0	24.0	N/A

Element Collapse Rating:	100 psid (7 bar)
Flow Direction:	Outside In
Element Nominal Dimensions:	3.75" (95 mm) O.D. x 5.5" (140 mm) long

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	P10, PZ25
High Water Content	PZ25
Invert Emulsions	PZ25
Water Glycols	PZ25

Note: Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications.

For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.

Spin-On Filter PAF1

Features

■ Full ported die cast aluminum head for minimum pressure drop. ■ Pipe and SAE straight thread porting. ■ Visual or electrical dirt alarms.

Element Selection Based on Flow Rate

Pressure	Element Series	Element Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 30 psi (2.1 bar) bypass valve.
To 100 psi (7 bar)	E Media	P10	P10
	Z Media	PZ25	PZ25
Flow		gpm	0 — 10 — 20
		(L/min)	0 — 25 — 50 — 75

Shown above are the elements most commonly used in this housing.

Pressure Drop Information Based on Flow Rate and Viscosity

$\Delta P_{filter} = \Delta P_{housing} + \Delta P_{element}$

Exercise:
Determine ΔP at 10 gpm (38 L/min) for PAF16P10SY2 using 200 SUS (44 cSt) fluid.

Solution:

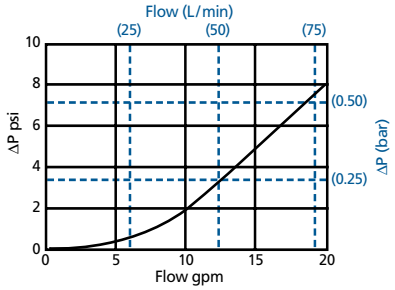
$\Delta P_{housing}$ = 2.0 psi [.18 bar]

$\Delta P_{element}$ = 10 x .17 x (200÷150) = 2.3 psi
or
= [38 x (.17÷54.9) x (44÷32) = .16 bar]

ΔP_{total} = 2.0 + 2.3 = 4.3 psi
or
= [.18 + .16 = .34 bar]

$\Delta P_{housing}$

PAF1 $\Delta P_{housing}$ for fluids with sp gr = 0.86:



sp gr = specific gravity

$\Delta P_{element}$

$\Delta P_{element}$ = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

P10	.17
PZ25	.15

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor:
Divide viscosity by 150 SUS (32 cSt).

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Filter Model Number Selection

Filter Series	Element Length	Element Part No.	Seal Magnet	Porting	Dirt Alarm® (See Appendix A for complete list of options)
PAF1	6"	P10 PZ10 PZ25	(Omit) = Buna N	P = ¾" NPTF S = 1 1/16"-12 SAE Straight (SAE-12)	Y2 = Tri-Color Gauge ES = Electric Switch

Same Day Shipment Model

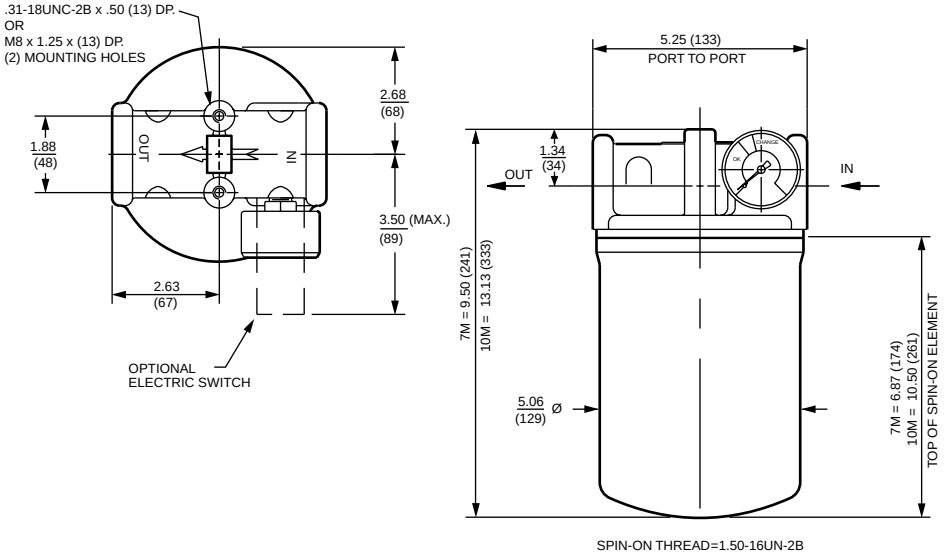
See Appendix E for details.

Other Available Options

See Appendix B for additional information on these options and instructions on how to order.

MAF1 Spin-On Filter

50 gpm
190 L/min
100 psi
7 bar



Metric dimensions in ( ).
Model No. of filter in photograph is MAF17M10S.

Filter Housing Specifications

Flow Rating:	Up to 50 gpm (190 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	150 psi (10 bar)
Rated Fatigue Pressure:	Contact factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2 bar) Full Flow: 48 psi (3 bar)
Porting Head & Cap:	Die Cast Aluminum
Element Case:	Steel
Weight of MAF1-7M:	4.2 lbs. (1.9 kg)
Weight of MAF1-10M:	5.0 lbs. (2.3 kg)
Element Change Clearance:	2.50" (65 mm)

Element Performance Information

7" Element	Absolute Rating Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402 $\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	Abs. Rating wrt ISO 16889 Using APC calibrated per ISO 11171 $\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$	Dirt Holding Capacity gm
M3	6.8	7.5	10.0	N/A	N/A	50
M10	15.5	16.2	18.0	N/A	N/A	37
MZ3	<1.0	<1.0	<2.0	4.7	5.8	105
MZ10	7.4	8.2	10.0	10.0	12.7	104

Element Collapse Rating:	100 psid (7 bar)
Flow Direction:	Outside In
Element Nominal Dimensions:	7M: 5.0" (125 mm) O.D. x 7.0" (180 mm) long 10M: 5.0" (125 mm) O.D. x 10.5" (261 mm) long

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Paper (E) and Synthetic (Z) media
High Water Content	Z3, Z10
Invert Emulsions	Z10
Water Glycols	Z10

Note: Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications.

For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.

Features

■ Full ported die cast aluminum head for minimum pressure drop. ■ Pipe, SAE straight, and BSPP porting available. ■ Visual or electrical dirt alarms.

Element Selection
Based on Flow Rate

Pressure	Element Series	Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 30 psi (2.1 bar) bypass valve.
To 100 psi (7 bar)	E Media	M3	M3 / See RLT
		M10	M10 / See RLT
	Z Media	MZ3	MZ3 / See RLT
		MZ10	MZ10 / See RLT
Flow		gpm	0 10 20 30 40 50
		(L/min)	0 50 100 150 190

Shown above are the elements most commonly used in this housing.

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{filter} = \Delta P_{housing} + \Delta P_{element}$

Exercise:
Determine ΔP at 25 gpm (95 L/min) for MAF17M3P using 200 SUS (44 cSt) fluid.

Solution:

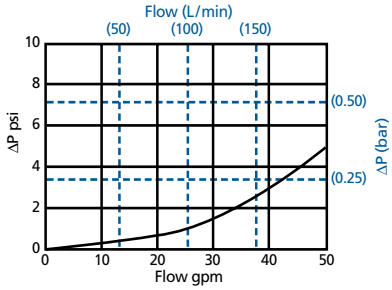
$\Delta P_{housing}$ = 1.0 psi [.08 bar]

$\Delta P_{element}$ = 25 x .23 x (200÷150) = 7.7 psi
or
= [95 x (.23÷54.9) x (44÷32) = .54 bar]

ΔP_{total} = 1.0 + 7.7 = 8.7 psi
or
= [.08 + .54 = .62 bar]

$\Delta P_{housing}$

MAF1 $\Delta P_{housing}$ for fluids with sp gr = 0.86:



sp gr = specific gravity

$\Delta P_{element}$

$\Delta P_{element}$ = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

	7"
M3	.23
M10	.14
MZ3	.22
MZ10	.17

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor:
Divide viscosity by 150 SUS (32 cSt).

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Filter Model Number Selection

Filter Series	Element Length	Element Part No.	Seal Material	Porting	Dirt Alarm® (See Appendix A for complete list of options)
MAF1	7"	M3 M10 MZ3 MZ10 MW	(Omit) = Buna N V = Viton*	P = 1¼" NPTF S = 1⅝"-12 SAE Straight (SAE-20) B = ISO 228 G-1¼ (1¼-11 BSPP) (B porting supplied with metric mounting holes)	Y2 = Tri-Color Gauge ES = Electric Switch
	10"	MZ3 MZ10			

Note: Replacement element part numbers for 7" length begin with "M".
Replacement element part numbers for 10" length begin with "10M".
*Aluminum parts are anodized.

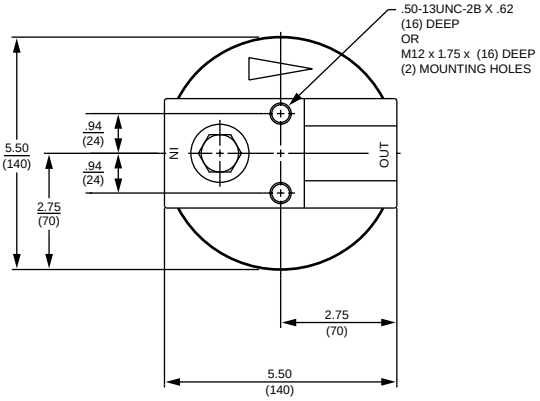
L = Two ⅛" NPTF inlet and outlet female test ports

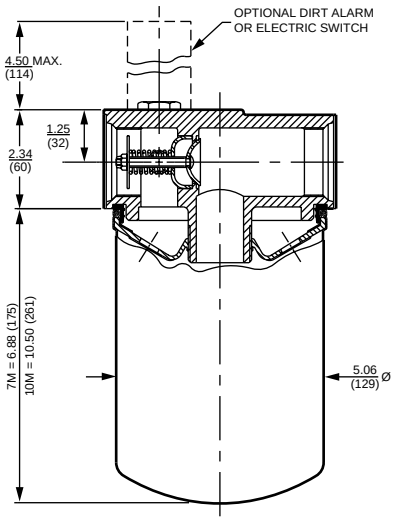
Other Available Options

See Appendix B for additional information on these options and instructions on how to order.

MF2 Spin-On Filter

60 gpm
230 L/min
150 psi
10 bar





SPIN-ON THREAD=1.50-16UN-2B

Metric dimensions in ( ).
Model No. of filter in photograph is MF27M10SD5.

Filter Housing Specifications

Flow Rating:	Up to 60 gpm (230 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	150 psi (10 bar)
Min. Yield Pressure:	250 psi (17 bar)
Rated Fatigue Pressure:	Contact factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2 bar) Full Flow: 48 psi (3 bar)
Porting Head: Element Case:	Cast Iron Steel
Weight of MF2-7M:	8.6 lbs. (3.9 kg)
Element Change Clearance:	1.50" (40 mm)

Element Performance Information

7" Element	Absolute Rating Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402 $\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	Abs. Rating wrt ISO 16889 Using APC calibrated per ISO 11171 $\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$	Dirt Holding Capacity gm
M3	6.8	7.5	10.0	N/A	N/A	50
M10	15.5	16.2	18.0	N/A	N/A	37
MZ3	<1.0	<1.0	<2.0	4.7	5.8	105
MZ10	7.4	8.2	10.0	10.0	12.7	104

Element Collapse Rating:	100 psid (7 bar)
Flow Direction:	Outside In
Element Nominal Dimensions:	7M: 5.0" (125 mm) O.D. x 7.0" (180 mm) long 10M: 5.0" (125 mm) O.D. x 10.5" (261 mm) long

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Paper (E) and Synthetic (Z) media
High Water Content	Z3, Z10
Invert Emulsions	Z10
Water Glycols	Z10

Note: Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications.

For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.

Features

■ Full ported cast iron head for minimum pressure drop. ■ Pipe, SAE straight, and BSPP porting available. ■ Differential pressure cartridge dirt alarm.

Element Selection
Based on Flow Rate

Pressure	Element Series	Element Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 30 psi (2.1 bar) bypass valve.
To 150 psi (10 bar)	E Media	7M3	7M3 / See RLT
		7M10	7M10 / See RLT
	Z Media	7MZ3	7MZ3 / See RLT
		7MZ10	7MZ10 / See RLT
Flow		gpm	0 20 30 40 50 60
		(L/min)	0 50 100 150 230

Shown above are the elements most commonly used in this housing.

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{filter} = \Delta P_{housing} + \Delta P_{element}$

Exercise:
Determine ΔP at 30 gpm (115 L/min) for MF27MZ3D5 using 200 SUS (44 cSt) fluid.

Solution:

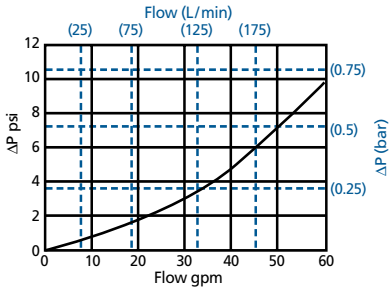
$\Delta P_{housing}$ = 3.0 psi [.22 bar]

$\Delta P_{element}$ = 30 x .22 x (200÷150) = 8.8 psi
or
= [115 x (.22÷54.9) x (44÷32) = .63 bar]

ΔP_{total} = 3.0 + 8.8 = 11.8 psi
or
= [.22 + .63 = .83 bar]

$\Delta P_{housing}$

MF2 $\Delta P_{housing}$ for fluids with sp gr = 0.86:



sp gr = specific gravity

$\Delta P_{element}$

$\Delta P_{element}$ = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

	M
M3	.23
M10	.14
MZ3	.22
MZ10	.17

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor:
Divide viscosity by 150 SUS (32 cSt).

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Filter Model Number Selection

Filter Series	Element Length	Element Part No.	Seal Material	Porting	Dirt Alarm® (See Appendix A for complete list of options)
MF2	7"	M3 M10 MZ3 MZ10 MW	(Omit) = Buna N V = Viton	P = 1¼" NPTF S = 1⅝"-12 SAE Straight (SAE-20) B = ISO 228 G-1¼ (1¼-11 BSPP) (B porting supplied with metric mounting holes)	D5 = Cartridge Electric Cartridge: MS5AC/DC/LC Family (See Appendix A)
	10"	MZ3 MZ10			

Note: Replacement element part numbers for 7" length begin with "M".
Replacement element part numbers for 10" length begin with "10M".

Other Available Options

See Appendix B for additional information on these options and instructions on how to order.