

SERIES
SF2-500
SUCTION FILTER



MPFILTRI
filtri per oleodinamica



Flow rates to 225 gpm

Description

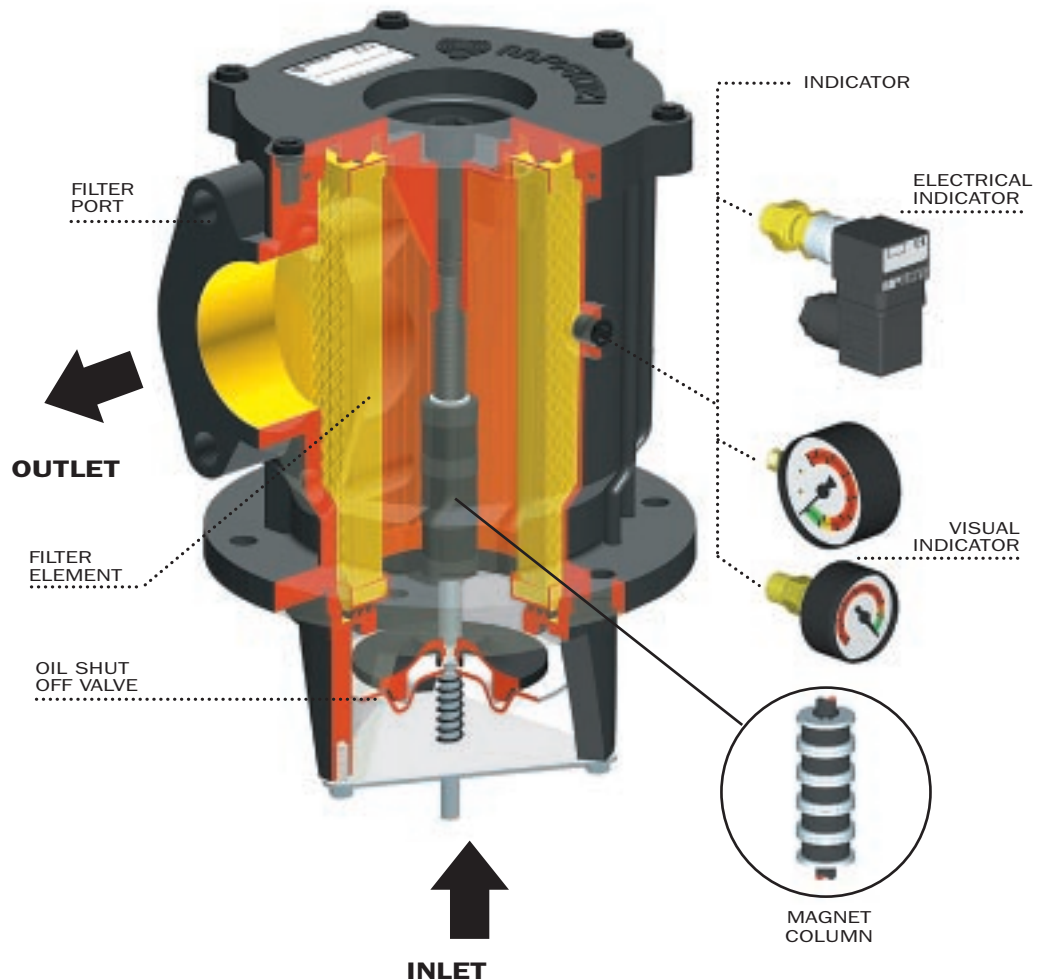
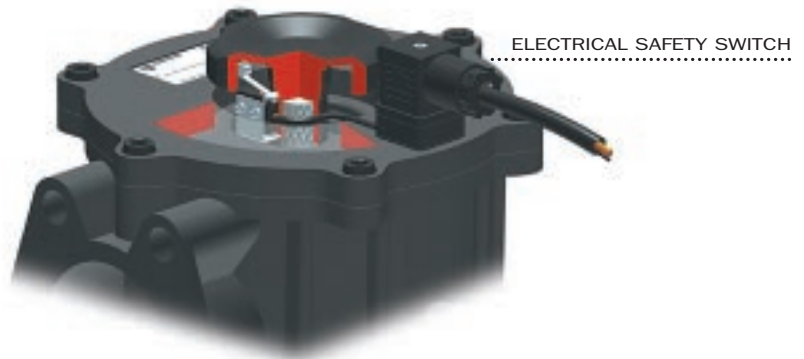
SF2 500

The SF2 series are designed for reservoir side-wall mounting applications, suitable for flow rates to 225 gpm and filtration from 25 to 250 micron.

The design of the SF2 ensures an excellent performance in terms of low pressure drop and high dirt holding capacity. The SF2 filters are without bypass and include a magnetic prefilter. The filtration flow from «inside to outside» of the filter element ensures that the contaminant is collected inside the element itself, avoiding contact with tank oil during element change.

A major feature of these filters is that the filter element (situated under the oil level) can be changed without emptying the reservoir; the valve is controlled by the handwheel on the filter cover. To avoid accidental start up when the valve is closed, an antistart safety switch is available as an option.

Clogging indicators are available in electrical or visual styles. These filters are particularly suitable for industrial application, die-casting and plastic injection machines.



Institute of Filtration
(France)



Filter element:

Materials

End caps:

Nylon

Support tube:

Steel expanded metal

Support frames:

Expanded metal

Element material Nominal filtration

M Series

Square wire mesh (filtration degree is defined in microns by the maximum diameter of a sphere corresponding to the mesh size).

Filtering area Filter elements

Type SF2	SF2 503	SF2 504	SF2 505	SF2 510	SF2 535	SF2 540
M25	355	415	265	280	565	800
M60	355	415	265	280	565	800
M90	355	415	265	280	565	800
M250	355	415	265	280	565	800

Values in IN²

Filter body:

Materials

Head

Pressure aluminium die casting
Steel (only for SF2 535-540)

Seals

A Series: Nitrile (Buna-N)
V Series: Viton

Cover

Anodized aluminium

Indicator

Brass

"C1" Optional Flange

Anodized aluminium

Working temperature

From -13 to +230°F
For temperature outside this range, please consult our Sales and Network Organization

Types of indicator

Description:
SF2 500 series filters are available with visual and electrical indicators.

Visual indicator

V Series (radial connection)
V0 Series (axial connection)

vacuumeter: scale 0÷30 in Hg
vacuumeter: scale 0÷30 in Hg

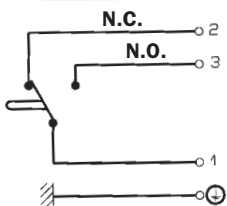
Electrical indicator

E1 Series:
vacuumeter with change-over contacts at the setting pressure of 3 psi±10%. Calibration range from 2.5 to 12.5 psi.

Operational information:

Max voltage: 220 Vac 50÷60 Hz
Max current: 0.5 A resistive,
0.2 A inductive.
Protection degree IP65

Electrical safety Switch



The scheme refers to the oil shut off valve in a closed position

Protection degree: IP67
Max voltage: 250Vca 50-60Hz
Max current: 3A resistive
3A inductive

Compatibility with fluids

Filter head and bowls

compatible for use with:

- mineral oils
(types HH-HL-HM-HR-HV-HG as per ISO 6743/4)
- water-based emulsions
(types HFAE-HFAS as per ISO 6743/4)
- synthetic fluids
(types HS-HFDR-HFDS-HFDU as per ISO 6743/4)
- water-glycol
(types HFC as per ISO 6743/4)

Ask for anodised version

Filter elements

As per ISO 2943; suitable for mineral oils (types HH-HL-HM-HR-HV-HG as per ISO 6743/4)
synthetic fluids (A and M series only)
(types HS-HFDR-HFDS-HFDU as per ISO 6743/4)

For water-based emulsions (type HFAE-HFAS as per ISO 6743/4) and fluids other than those mentioned, please consult our Sales Network Organization.

Seals

A Series

Nitrile (Buna-N) compatible with mineral oils
(types HH-HL-HM-HR-HV-HG as per ISO 6743/4) water - based emulsions
(types HFAE-HFAS as per ISO 6743/4)

water - glycol
(types HFC as per ISO 6743/4)

V Series

Viton compatible with synthetic fluids
(types HS-HFDR-HFDS-HFDU as per ISO 6743/4)

Selection

& installation information

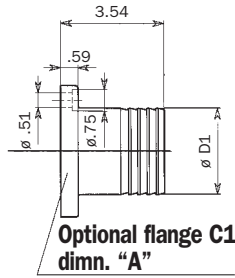
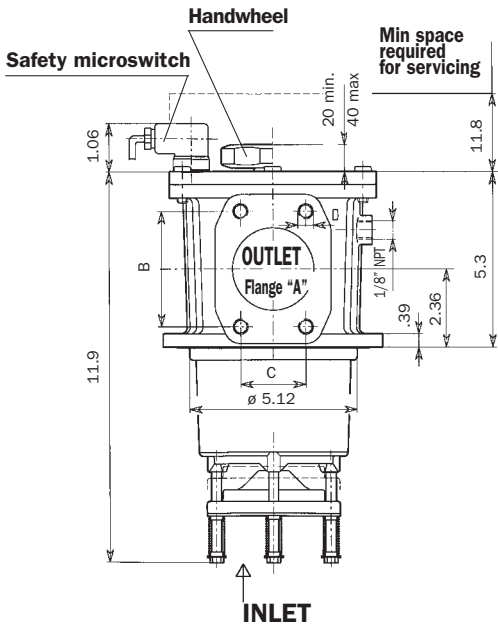
Filter element types **M Series**
 Metal mesh media, available in 25, 60, 90, 250 µm
 Example - **M25, M60, M90 or M250**

Please refer to individual pressure drop curves to obtain filter assembly pressure drop information

The following filter sizing recommendations are based using a mineral oil fluid at 150 sus with a maximum total filter assembly (housing and filter element) pressure drop of **1.15 psi**.

SF2 SERIES 500 - 501

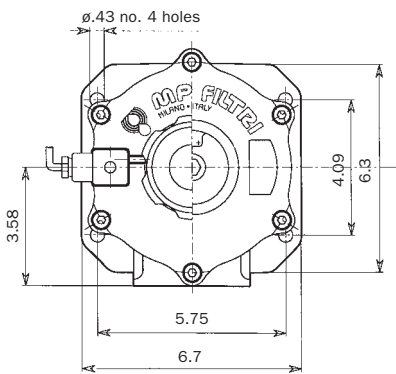
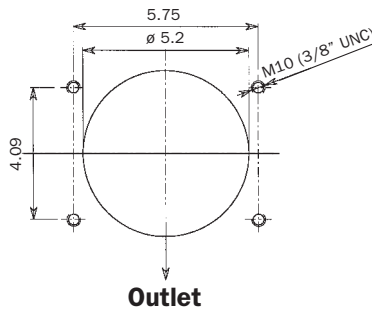
SF2 500-501



Filter Assembly	Flow rate gpm *	Port Size BSP/NPT/SAE	Weight Lbs **
M25	66	2" SAE	8.8
M60	75		
M90	75		
M250	75		
M25	80	2" 1/2 SAE	8.8
M60	90		
M90	90		
M250	90		

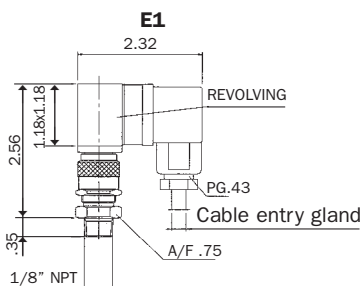
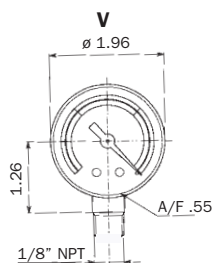
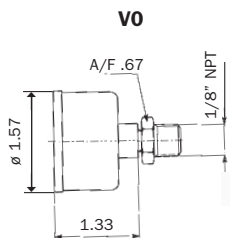
* Flow rates with 150 SUS fluid viscosity
 ** Weight including filter element

Filter mounting dimms



Flange Connections

Type	A	B	C	D	D1
500- F1	2"SAE 3000PSI/M	3.05	1.69	M12	2.48
500- F2	2"SAE 3000PSI/UNC	3.05	1.69	1/2" UNC	2.48
501- F1	2 1/2" SAE 3000PSI/M	3.5	2.0	M12	2.95
501- F2	2 1/2" SAE 3000PSI/UNC	3.5	2.0	1/2" UNC	2.95



Selection & installation information

Filter element types **M Series**

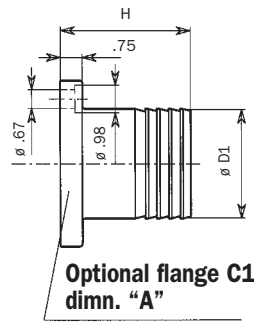
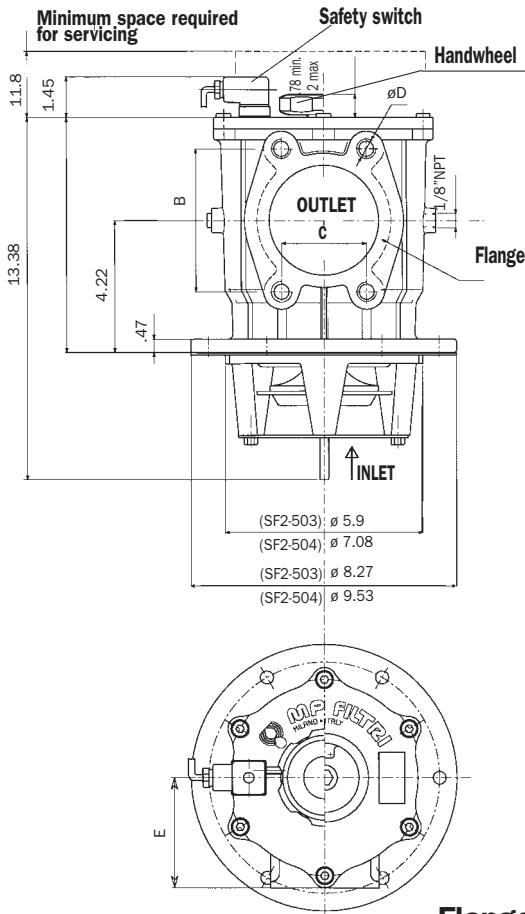
Metal mesh media, available in 25, 60, 90, 250 μ m
Example - **M25, M60, M90 or M250**

Please refer to individual pressure drop curves to obtain filter assembly pressure drop information

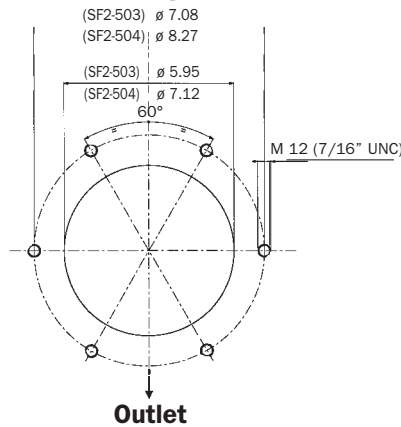
The following filter sizing recommendations are based using a mineral oil fluid at 150 SUS with a maximum total filter assembly (housing and filter element) pressure drop of **1.15 psi**

SF2 SERIES 503 - 504

SF2 503-504



Filter mounting dimms.

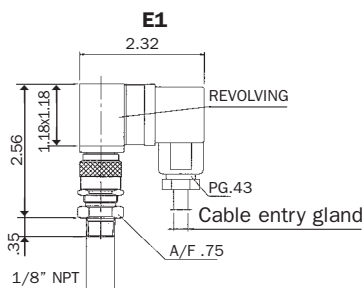
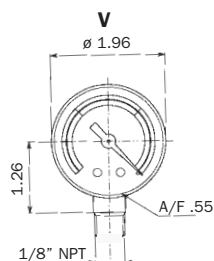
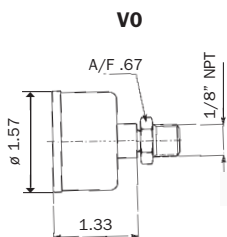


Filter Assembly	Flow rate gpm *	Port Size BSP/NPT/SAE	Weight Lbs **
M25	105	3" SAE	10.6
M60	125		
M90	125		
M250	125		
M25	145	4" SAE	12.75
M60	170		
M90	170		
M250	170		

* Flow rates with 150 SUS fluid viscosity
 ** Weight including filter element

Flange Connections

Type	A	B	C	D	D1	E	H
503- F1	3" SAE 3000PSI/M	4.19	2.44	M16	3.50	4.33	3.74
503- F2	3" SAE 3000PSI/UNC	4.19	2.44	5/8" UNC	3.50	4.33	3.74
504- F1	4" SAE 3000PSI/M	5.125	3.06	M16	4.5	4.72	3.94
504- F2	4" SAE 3000PSI/UNC	5.125	3.06	5/8" UNC	4.5	4.72	3.94



Selection

& installation information

Filter element types **M Series**

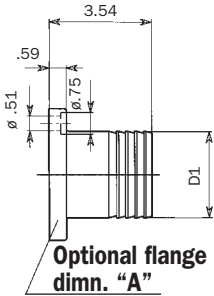
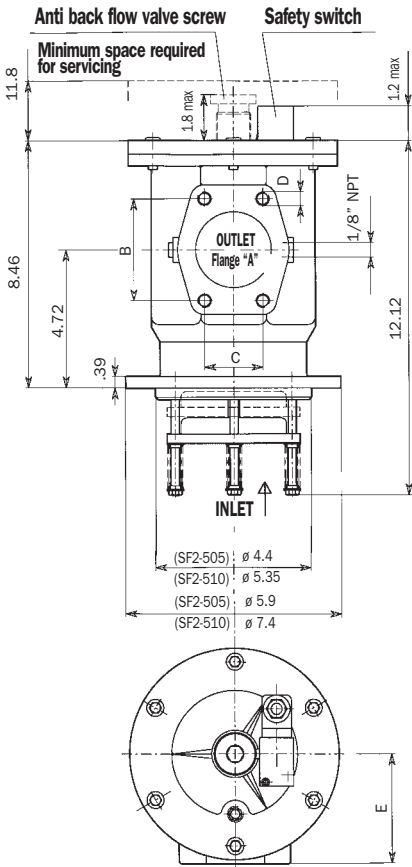
Metal mesh media, available in 25, 60, 90, 250 µm
 Example - **M25, M60, M90 or M250**

Please refer to individual pressure drop curves to obtain filter assembly pressure drop information

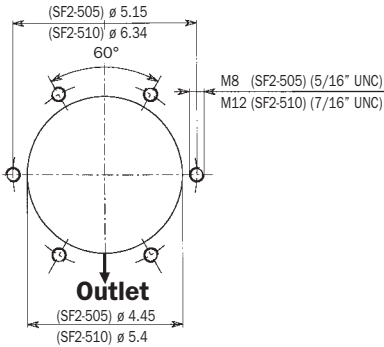
The following filter sizing recommendations are based using a mineral oil fluid at 150 SUS with a maximum total filter assembly (housing and filter element) pressure drop of **1.15 psi**.

SF2 SERIES 505 - 510

SF2 505-510



Filter mounting dimms.

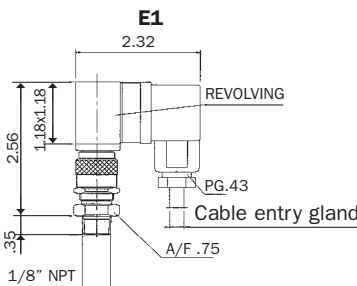
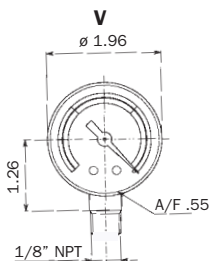
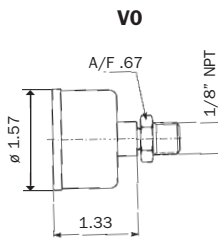


Filter Assembly	Flow rate gpm *	Port Size BSP/NPT/SAE	Weight Lbs **
M25	52	2" SAE	13.2
M60	66		
M90	66		
M250	66		
M25	66	2" 1/2 SAE	15.8
M60	75		
M90	75		
M250	75		

* Flow rates with 150 SUS fluid viscosity
 ** Weight including filter element

Flange Connections

Type	A	B	C	D	D1	E
505- F1	2"SAE 3000PSI/M	3.05	1.69	M12	2.48	3.3
505- F2	2"SAE 3000PSI/UNC	3.05	1.69	1/2" UNC	2.48	3.3
510- F1	2 1/2" SAE 3000PSI/M	3.5	2.0	M12	2.95	3.75
510- F2	2 1/2" SAE 3000PSI/UNC	3.5	2.0	1/2" UNC	2.95	3.75



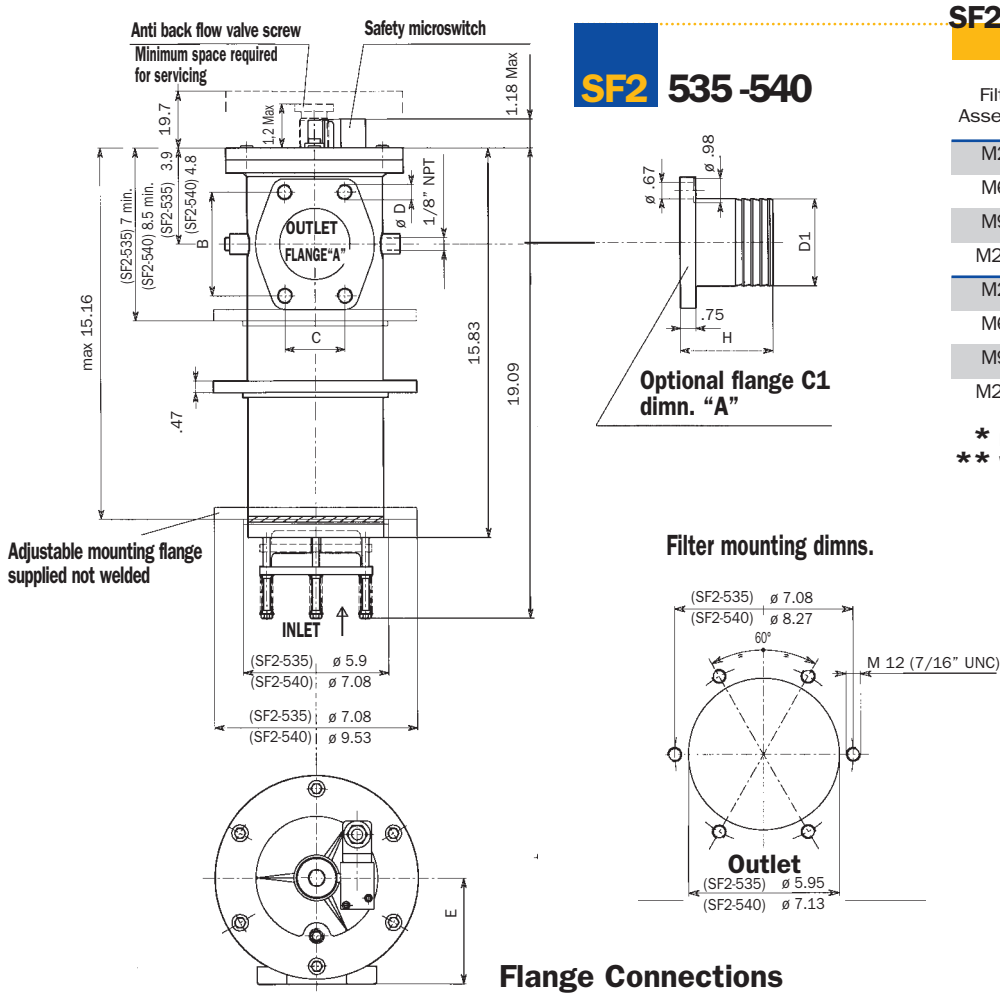
Selection & installation information

Filter element types **M Series**

Metal mesh media, available in 25, 60, 90, 250 μm
Example - **M25, M60, M90 or M250**

Please refer to individual pressure drop curves to obtain filter assembly pressure drop information

The following filter sizing recommendations are based using a mineral oil fluid at 150 SUS with a maximum total filter assembly (housing and filter element) pressure drop of **1.15 psi**.



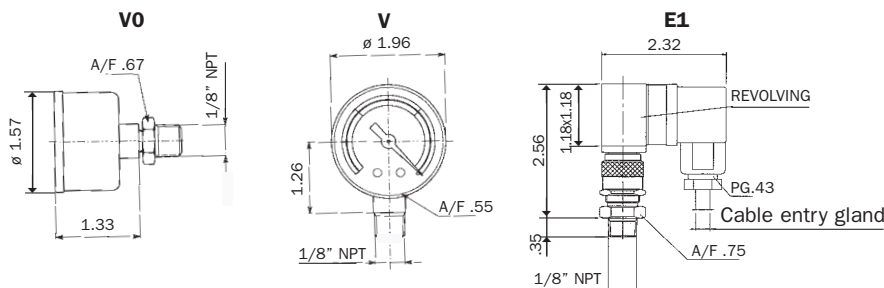
SF2 SERIES 535 - 540

Filter Assembly	Flow rate gpm *	Port Size BSP/NPT/SAE	Weight Lbs **
M25	118	3" SAE	37.4
M60	145		
M90	145		
M250	145	4" SAE	41.8
M25	185		
M60	212		
M90	212		
M250	212		

* Flow rates with 150 SUS fluid viscosity
** Weight including filter element

Flange Connections

Type	A	B	C	D	D1	E	H
535- F1	3"SAE 3000PSI/M	4.19	2.44	M16	3.5	4.3	3.74
535- F2	3"SAE 3000PSI/UNC	4.19	2.44	5/8"UNC	3.5	4.3	3.74
540- F1	4"SAE 3000PSI/M	5.125	3.06	M16	4.5	4.72	3.94
540- F2	4"SAE 3000PSI/UNC	5.125	3.06	5/8"UNC	4.5	4.72	3.94



Pressure drop information

General

Pressure drop versus flow rate curve information for both housing and filter elements is in accordance with ISO 3968

Filter assembly pressure drop - $\Delta p_{\text{Total}} = \Delta p_{\text{Housing}} + \Delta p_{\text{Filter element}}$

Housing pressure drop - The housing pressure drop is proportional to the fluid density

Filter element pressure drop - Filter element pressure drop is proportional to kinematic viscosity therefore always check the fluid operating temperature and fluid type to obtain the working viscosity according to the following formula:

$\Delta p_1 \text{ Filter element} = (\text{working viscosity} / \text{brochure viscosity}) \times \Delta p \text{ filter element}$

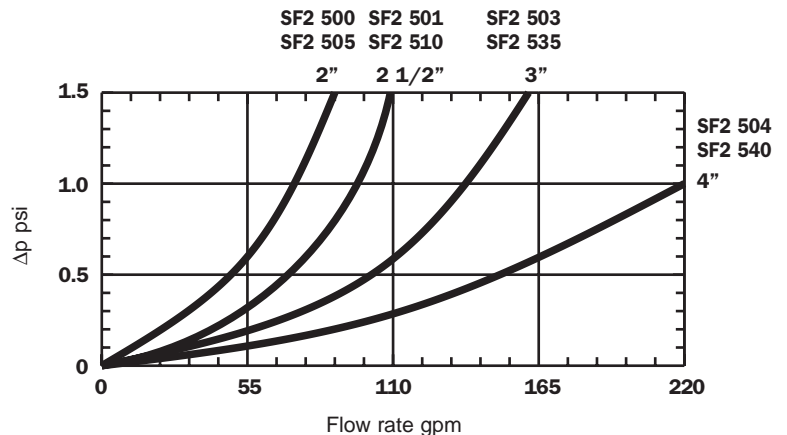
Filter assembly sizing example

Selection

- Customer requires a 66 gpm filter assembly
- Mineral oil fluid: ISO VG 46 (212 SUS) at 40°C
- M90 - 90 micron filtration
- **Housing pressure drop** - SF2 503 with 66 gpm $\Delta p = 0.2$ psi (see curve on page 9)
- **Filter element pressure drop** (brochure viscosity) - SF2 503 M90 A with 66 gpm $\Delta p = 0.5$ gpm (see curve on page 10)
- **Filter element pressure drop** (working viscosity) - With 212 SUS $\Delta p_1 = 0.55 \times (212/150) = .77$ psi
- **Filter assembly pressure drop** $\Delta p_{\text{Total}} = \Delta p_{\text{Housing}} + \Delta p_1 \text{ Filter element} = 0.2 + 0.77 = .79 \text{ psi}^*$ { *acceptable pressure drop as per our recommendations

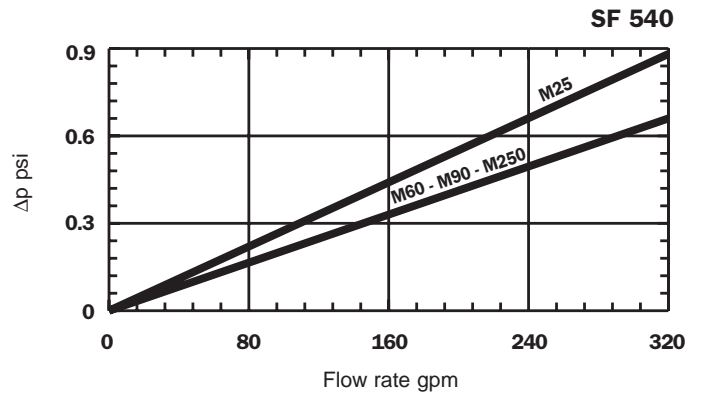
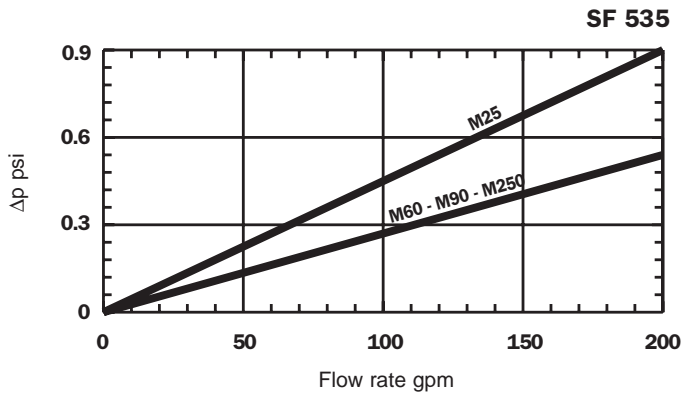
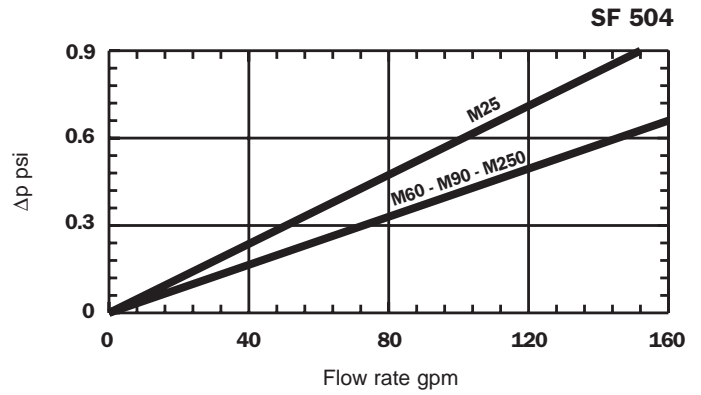
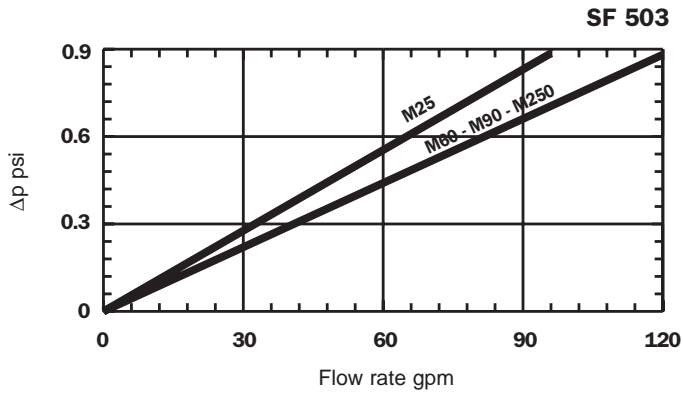
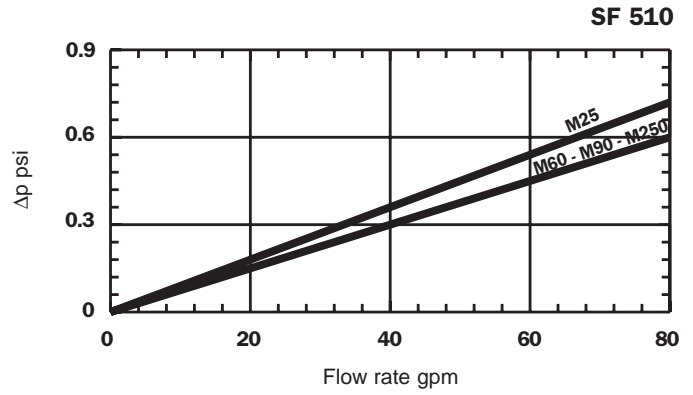
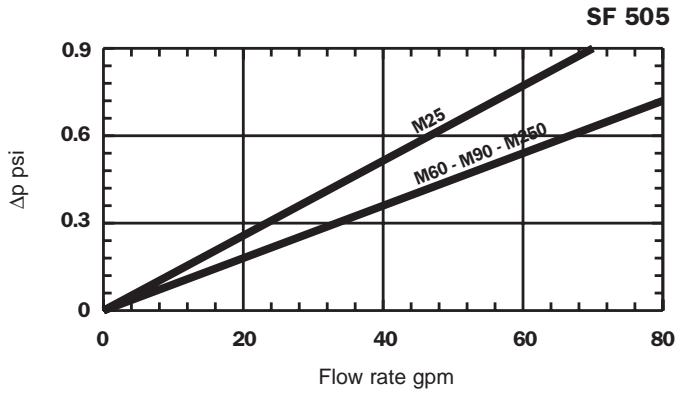
Filter housing pressure drop

The curves were obtained using a mineral oil with a density of 0,86 kg/dm³.
The Δp varies proportionally to the density



Filter element pressure drop

The curves were obtained using a mineral oil with a kinematic viscosity 150 SUS.
The Δp varies proportionally to the fluid kinematic viscosity.



Ordering code example

SF2

500

A

F1

S

M25

V

This example shows how order a complete filter with features based on the customer request.

Nominal sizes

500	(Use SF 510 filter element code)
501	
503	
504	
505	
510	
535	
540	

Filter condition indicator

S	With threaded hole only
T1	With hole + plug
V0	Visual (axial vacuumeter)
V	Visual (radial vacuumeter)
E1	Electrical (change-over contacts vacuumeter)

Seals

A	Nitrile (Buna-N)
V	Viton

Filter elements

M25	Square wire mesh
M60	
M90	
M250	

Port option

Type	500 505	501 510	503 535	504 540
F1	2"SAE 3000 PSI/M	2 1/2"SAE 3000 PSI/M	3"SAE 3000 PSI/M	4"SAE 3000 PSI/M
F2	2"SAE 3000 PSI/UNC	2 1/2" SAE 3000 PSI/UNC	3"SAE 3000 PSI/UNC	4"SAE 3000 PSI/UNC
C1 (flange)	2" SAE 3000 PSI	2 1/2" SAE 3000 PSI	3" SAE 3000 PSI	4" SAE 3000 PSI

Options

S	Without microswitch, without handwheel
C	With microswitch, without handwheel (505, 510, 535, 540)
D	With microswitch, with nylon handwheel (500, 501, 503, 504)
K	With microswitch, with steel handwheel (500, 501, 503, 504)
M	Without microswitch, with nylon handwheel (500, 501, 503,504)

Filter assy.

Element type

Filter assy.	Element type
500	510
501	510
503	503
504	504
505	505
510	510
535	535
540	540

SF

510

M25

This example shows how order a filter element with features based on the customer request

Replacement element

MP Filtri - Filtration products will only be guaranteed if original MP Filtri replacement elements and spares are used

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