

SERIES
SF2-500
SUCTION FILTER



MP FILTER
FILTRE per pneumatica



Flow rates to 850 l/min

Description

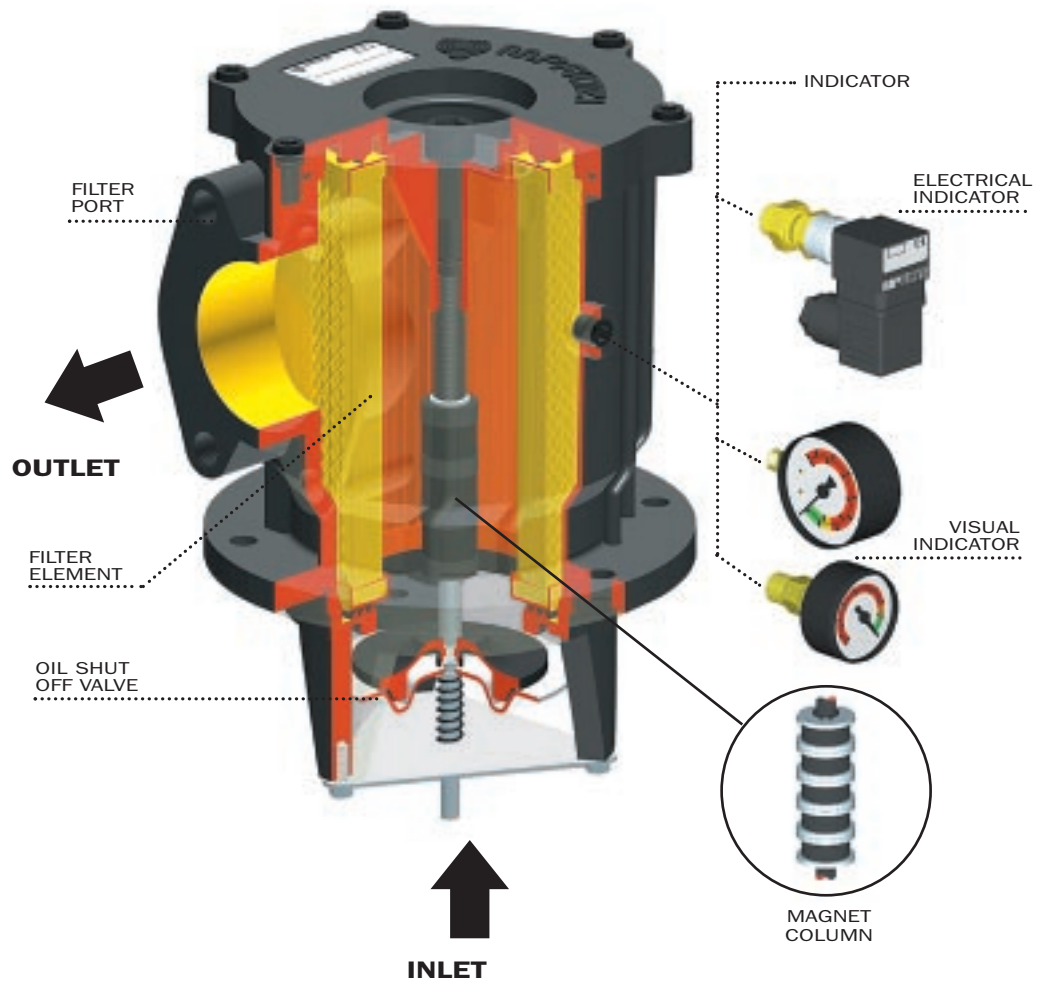
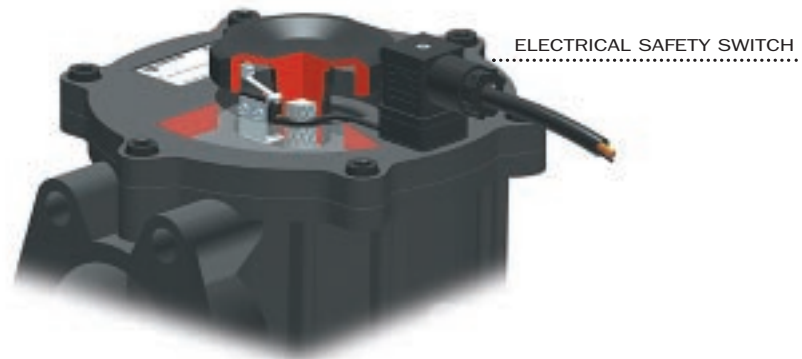
SF2 500

The SF2 series are designed for reservoir side-wall mounting applications, suitable for flow rates to 850 l/min 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 actioned by 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 as vacuum switches or as vacuum meters. These filters are particularly suitable for industrial application, die-casting and plastic injection machines.



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	2280	2660	1710	1800	3650	5110
M60	2280	2660	1710	1800	3650	5110
M90	2280	2660	1710	1800	3650	5110
M250	2280	2660	1710	1800	3650	5110

Values in cm²

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

Optional Flange

Anodized aluminium

Working temperature

From -25 to +110°C
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÷76 cmHg
vacuumeter: scale 0÷76 cmHg

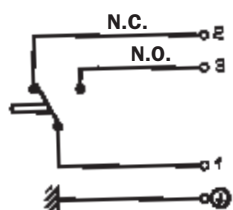
Electrical indicator

E1 Series:
vacuumeter with change-over contacts at the setting pressure of 20 kPa±10%. Calibration range from 15 to 90 kPa.

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

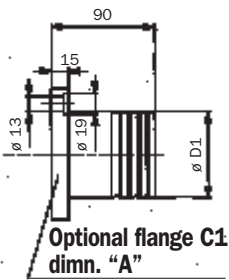
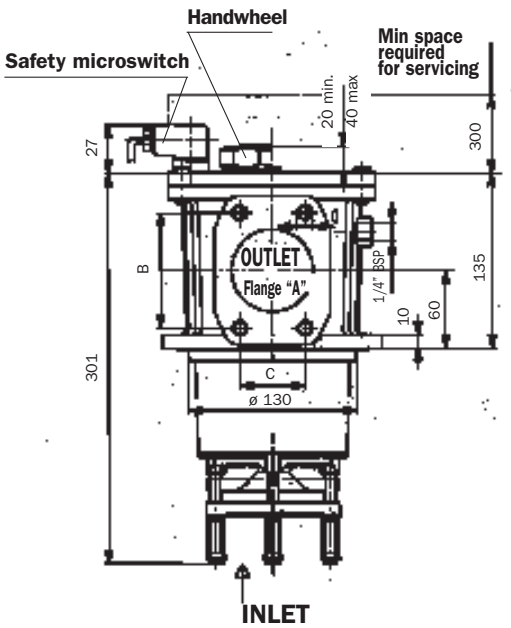
M Series
 Metal mesh media, available in 25, 60, 90, 250 µm
 Example - **M25, M60, M90 or M250**

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 30 mm²/s (cSt) with a maximum total filter assembly (housing and filter element) pressure drop of **8kPa** (0,08 bar)

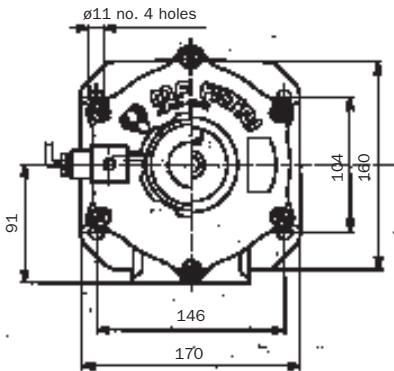
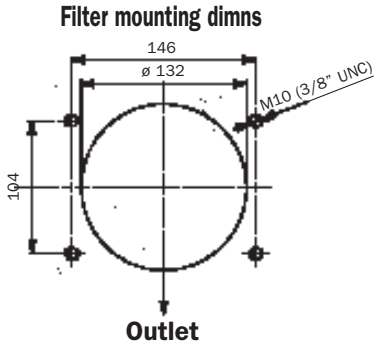
SF2 SERIES 500 - 501

SF2 500 -501



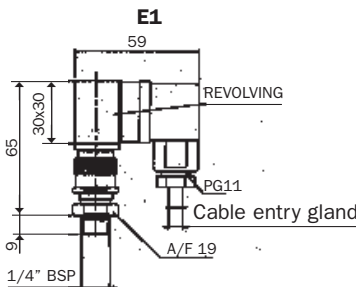
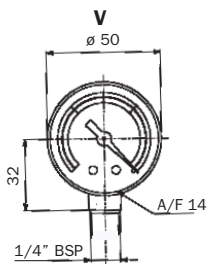
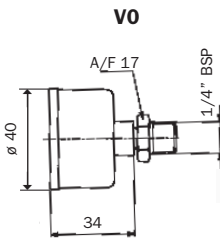
Filter Assembly	Flow rate l/min *	Port Size BSP/NPT/SAE	Weight kg **
M25	250	2" SAE	4,0
M60	280		
M90	280		
M250	280		
M25	300	2 1/2 SAE	4,0
M60	340		
M90	340		
M250	340		

* Flow rates with 30 mm²/s fluid viscosity
 ** Weight including filter element



Flange Connections

Type	A	B	C	D	D1
500- F1	2"SAE 3000PSI/M	77,77	42,88	M12	63
500- F2	2"SAE 3000PSI/UNC	77,77	42,88	1/2" UNC	63
501- F1	2 1/2" SAE 3000PSI/M	88,90	50,80	M12	75
501- F2	2 1/2" SAE 3000PSI/UNC	88,90	50,80	1/2" UNC	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

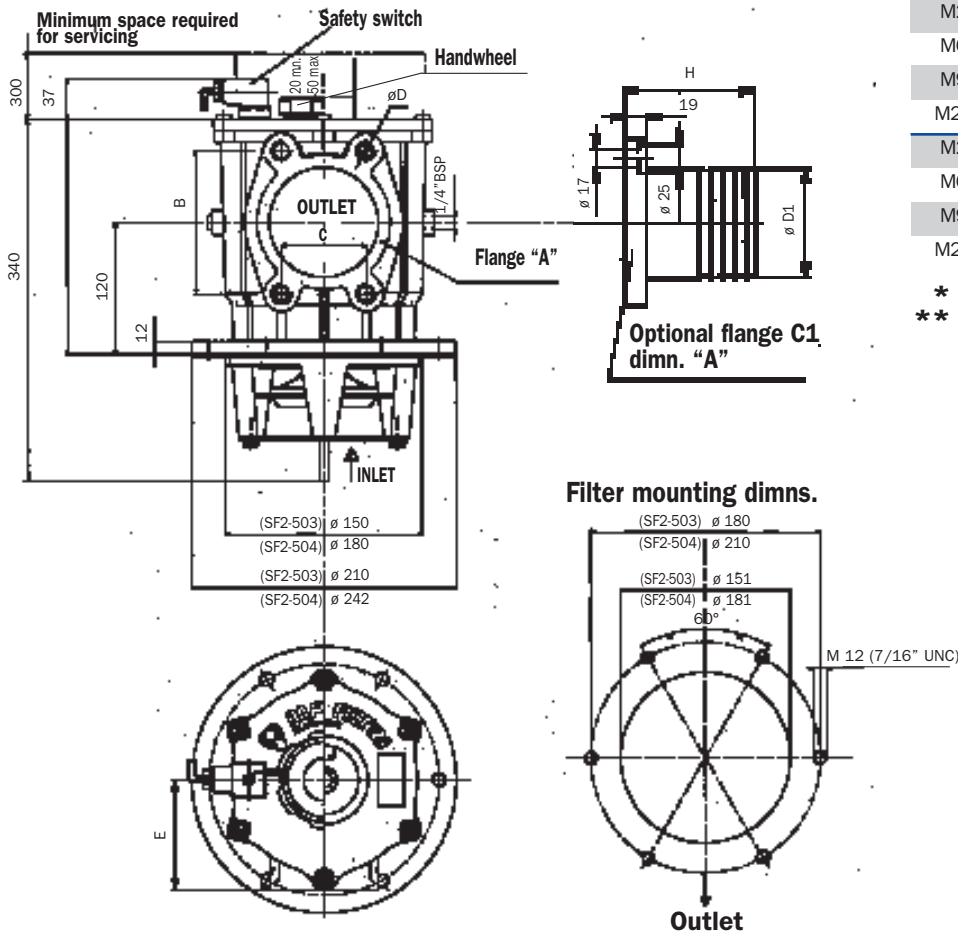
The following filter sizing recommendations are based using a mineral oil fluid at 30 mm²/s (cSt) with a maximum total filter assembly (housing and filter element) pressure drop of **8kPa** (0,08 bar)

SF2 SERIES 503 - 504

SF2 503-504

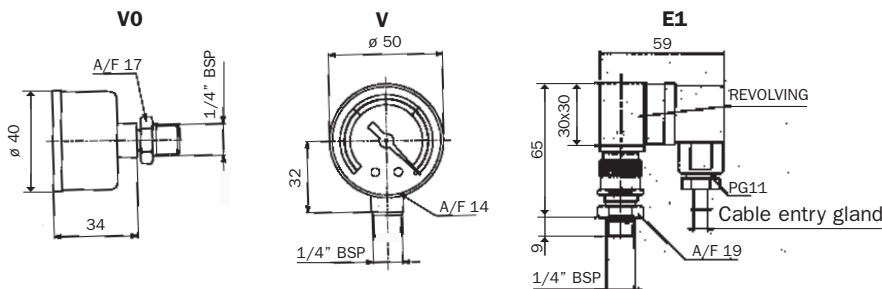
Filter Assembly	Flow rate l/min *	Port Size BSP/NPT/SAE	Weight kg **
M25	400	3" SAE	4,850
M60	480		
M90	480		
M250	480		
M25	550	4" SAE	5,80
M60	650		
M90	650		
M250	650		

* Flow rates with 30 mm²/s fluid viscosity
** Weight including filter element



Flange Connections

Type	A	B	C	D	D1	E	H
503- F1	3"SAE 3000PSI/M	106,38	61,93	M16	89	110	95
503- F2	3"SAE 3000PSI/UNC	106,38	61,93	5/8" UNC	89	110	95
504- F1	4"SAE 3000PSI/M	130,18	77,77	M16	114	120	100
504- F2	4" SAE 3000PSI/UNC	130,18	77,77	5/8" UNC	114	120	100



Selection & installation information

Filter element types **M Series**

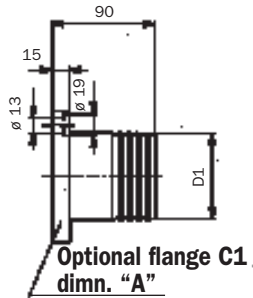
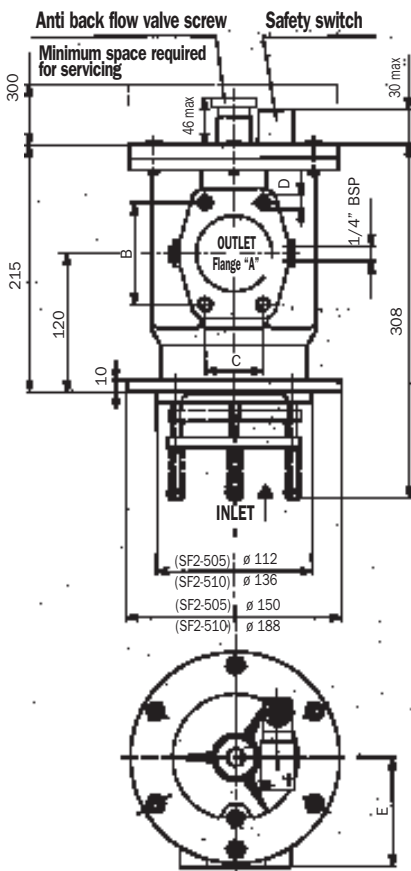
Metal mesh media, available in 25, 60, 90, 250 μm
Example - **M25, M60, M90 or M250**

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

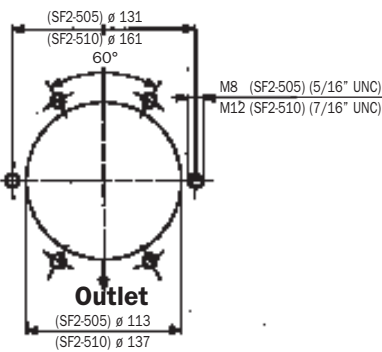
The following filter sizing recommendations are based using a mineral oil fluid at 30 mm²/s (cSt) with a maximum total filter assembly (housing and filter element) pressure drop of **8kPa** (0,08 bar)

SF2 SERIES 505 - 510

SF2 505-510



Filter mounting dimns.

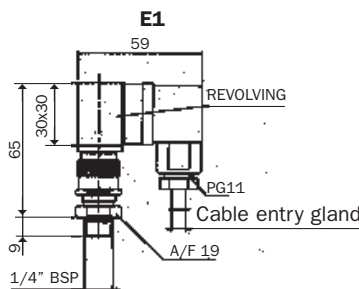
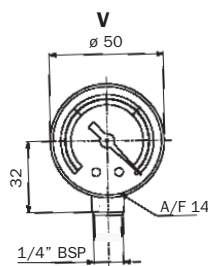
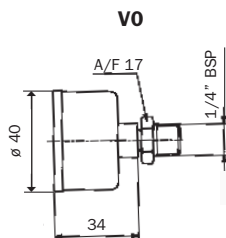


Filter Assembly	Flow rate l/min *	Port Size BSP/NPT/SAE	Weight kg **
M25	200	2" SAE	6,0
M60	250		
M90	250		
M250	250		
M25	250	2" 1/2 SAE	7,2
M60	280		
M90	280		
M250	280		

* Flow rates with 30 mm²/s fluid viscosity
** Weight including filter element

Flange Connections

Type	A	B	C	D	D1	E
505- F1	2"SAE 3000PSI/M	77,77	42,88	M12	63	84
505- F2	2"SAE 3000PSI/UNC	77,77	42,88	1/2" UNC	63	84
510- F1	2 1/2" SAE 3000PSI/M	88,90	50,80	M12	75	95
510- F2	2 1/2" SAE 3000PSI/UNC	88,90	50,80	1/2" UNC	75	95



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

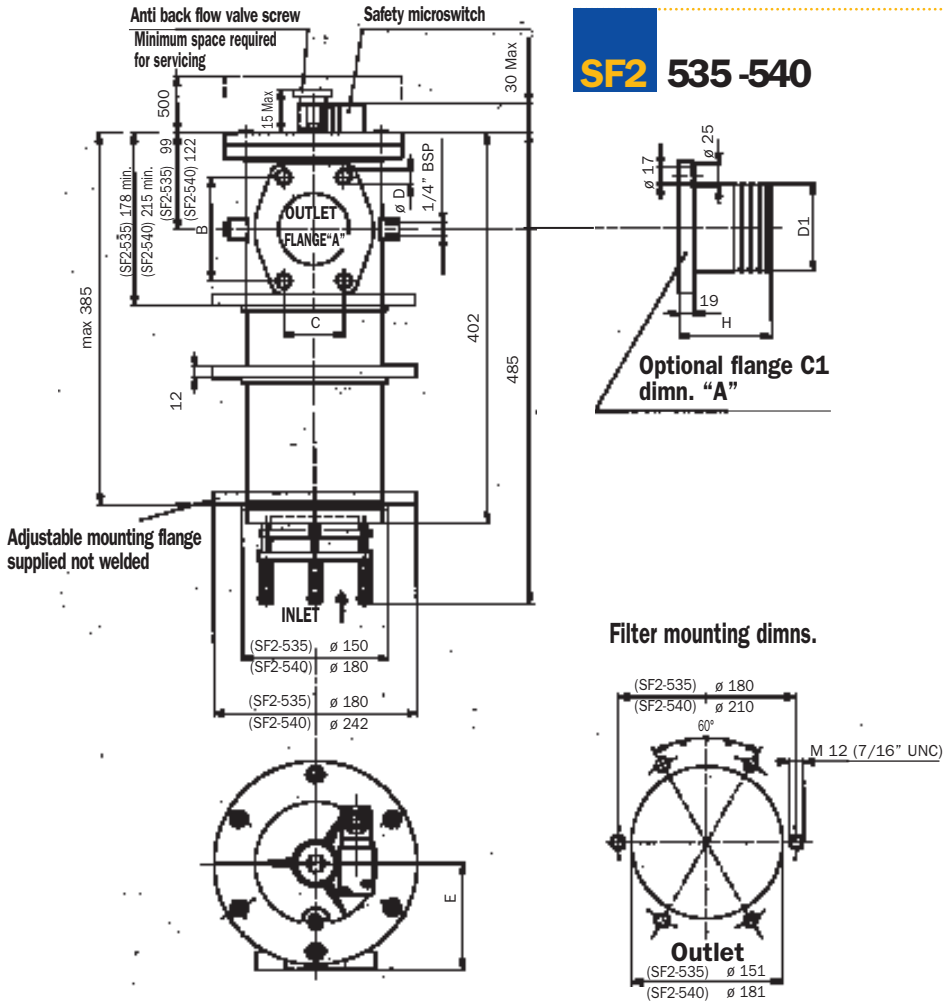
The following filter sizing recommendations are based using a mineral oil fluid at 30 mm^2/s (cSt) with a maximum total filter assembly (housing and filter element) pressure drop of **8k Pa** (0,08 bar).

SF2 SERIES 535 - 540

SF2 535-540

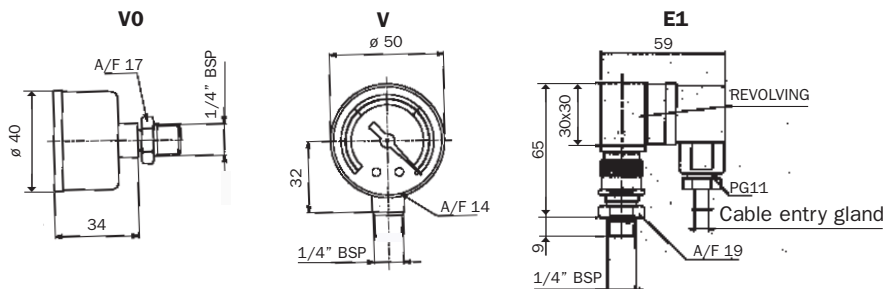
Filter Assembly	Flow rate l/min *	Port Size BSP/NPT/SAE	Weight kg **
M25	450	3" SAE	17,0
M60	550		
M90	550		
M250	550		
M25	700	4" SAE	19,0
M60	800		
M90	800		
M250	800		

* Flow rates with 30 mm^2/s fluid viscosity
** Weight including filter element



Flange Connections

Type	A	B	C	D	D1	E	H
535- F1	3"SAE 3000PSI/M	106,38	61,93	M16	89	110	95
535- F2	3"SAE 3000PSI/UNC	106,38	61,93	5/8"UNC	89	110	95
540- F1	4"SAE 3000PSI/M	130,18	77,77	M16	114	120	100
540- F2	4"SAE 3000PSI/UNC	130,18	77,77	5/8"UNC	114	120	100



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:

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

1 bar = 100 kPa

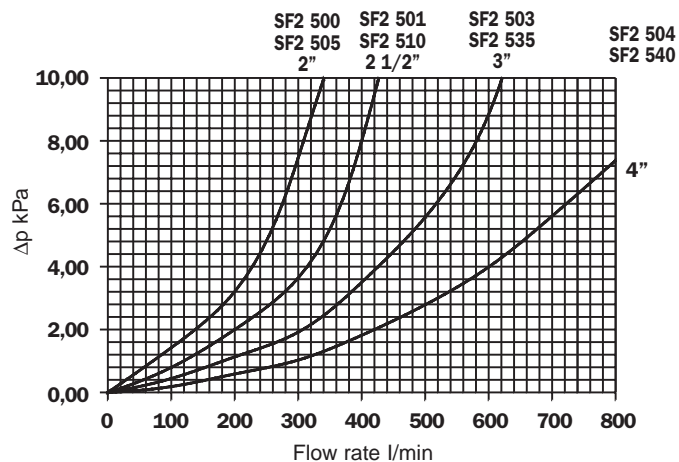
Filter assembly sizing example

Selection

- Customer requires a 250 l/min filter assembly
- Mineral oil fluid: ISO VG 46 (46 mm²/s (cSt) at 40°C)
- M90 - 90 micron filtration
- **Housing pressure drop** - SF2 503 with 250 l/min $\Delta p = 1,4 \text{ kPa}$ (see curve on page 9)
- **Filter element pressure drop** (brochure viscosity) - SF2 503 M90 A with 250 l/min $\Delta p = 3,5 \text{ kPa}$ (see curve on page 10)
- **Filter element pressure drop** (working viscosity) - With 46 mm²/s (cSt) $\Delta p_1 = 3,5 \times (46/30) = 5,4 \text{ kPa}$
- **Filter assembly pressure drop** $\Delta p_{\text{Total}} = \Delta p_{\text{Housing}} + \Delta p_1 \text{ Filter element} = 1,4 + 5,4 = 6,8 \text{ kPa}^*$ { *acceptable pressure drop as per our recommendations

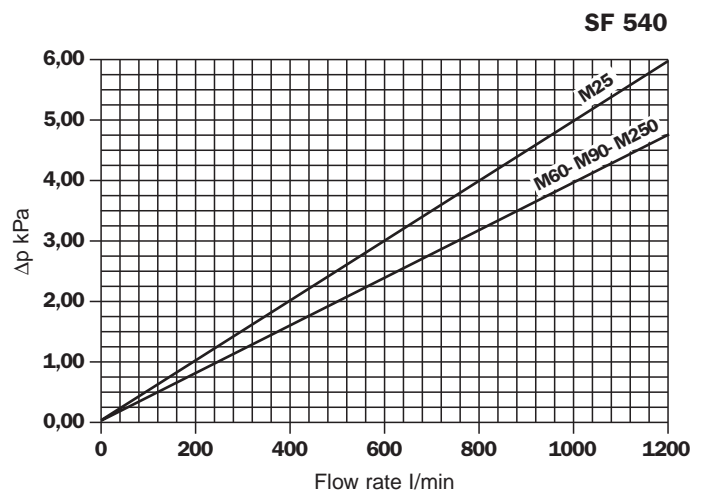
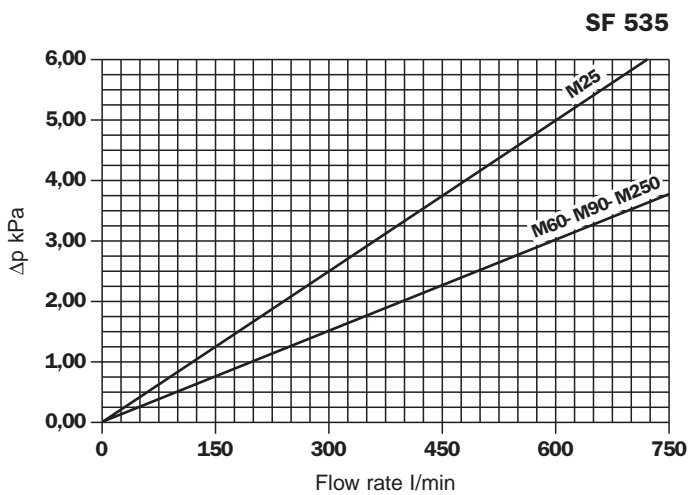
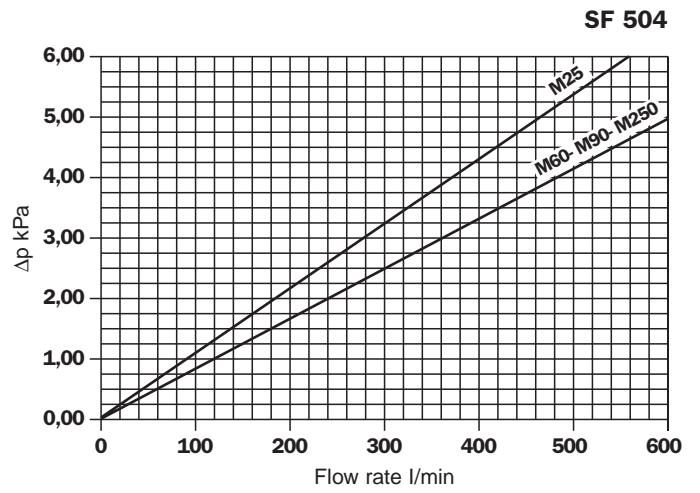
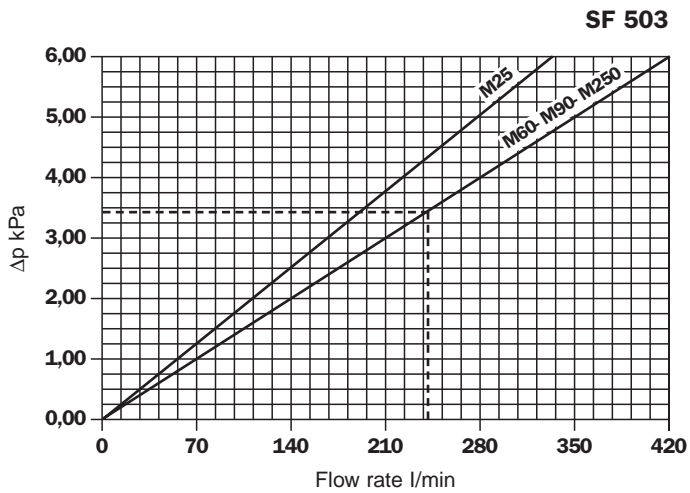
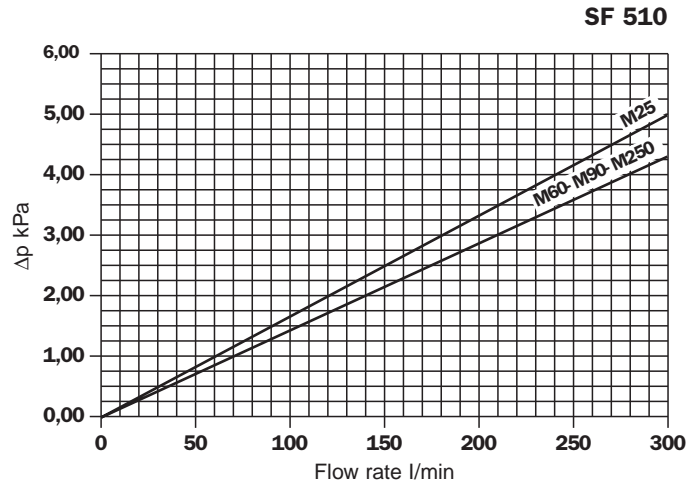
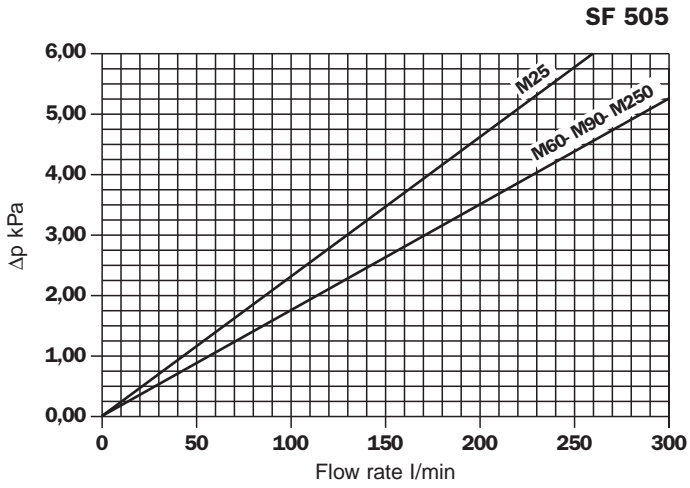
Filter housing pressure drop

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 of 30 mm²/s (cSt). 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	

Seals

A	Nitrile (Buna-N)
V	Viton

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

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

Filter elements

M25	Square wire mesh
M60	
M90	
M250	

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)

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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