

**S**ERIES  
**SF2-250**  
**S**UCTION FILTER



**MPFILTRI**  
filtri per oleodinamica



Flow rate to 45 gpm

# Description

# SF2 250

The SF2 series suction filter are designed for reservoir side-wall applications.

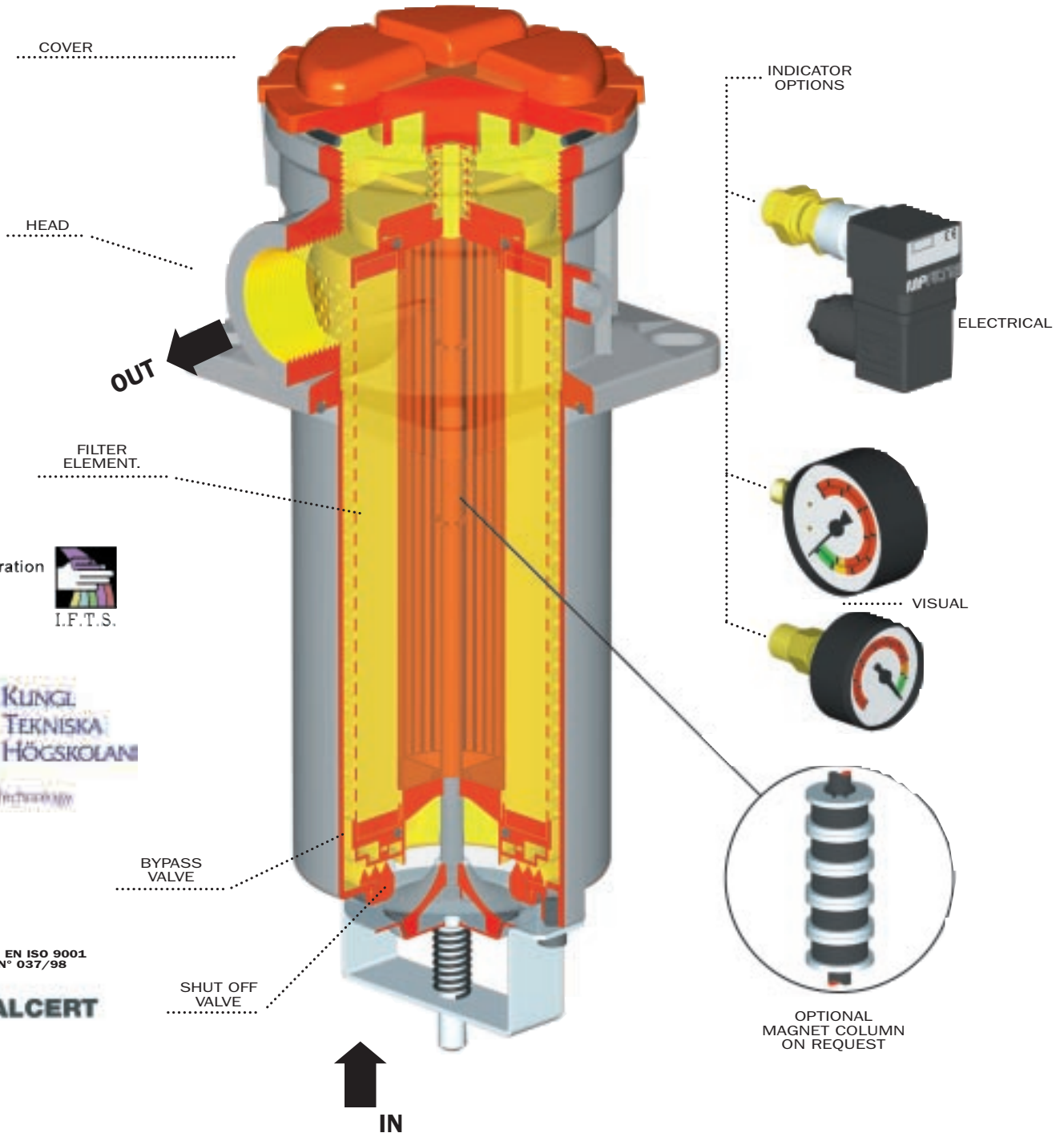
This completely new design of filter allows the filter element to be replaced without having to drain the oil from the reservoir.

Unscrewing the filter cover operates a shut off valve

within the filter preventing oil loss from the reservoir.

The SF2 250 filter uses a vacuum gauge or electrical vacuum switch for filter element indication.

These filters are particularly suitable for power pack, mobile, construction and industrial machinery application.



Institute of Filtration  
(France)  
I.F.T.S.



UNI EN ISO 9001  
N° 037/98  
ITALCERT

## Filter element:

### Materials

#### End caps:

Nylon

#### Support tube:

Steel

#### 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	250
M25	310
M60	310
M90	310
M250	310

Values in IN<sup>2</sup>

## Filter body:

### Materials

#### Head

Pressure die cast aluminium

#### Seals

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

#### Cover

Nylon

#### Indicator

Brass

### Working temperature

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

### Bypass valve Setting pressure

Bypass valve, differential opening pressure: **4.5Psi ± 10%**

## 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)

#### V Series

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

## Types of indicator

Description:

**SF2 250** series filters are fitted with visual and electrical indicators.

### Visual indicator

**V Series** (radial)  
**V0 Series** (axial)

vacuummeter: scale 0-30 In HG  
vacuummeter: scale 0-30 In HG

### Electrical indicator

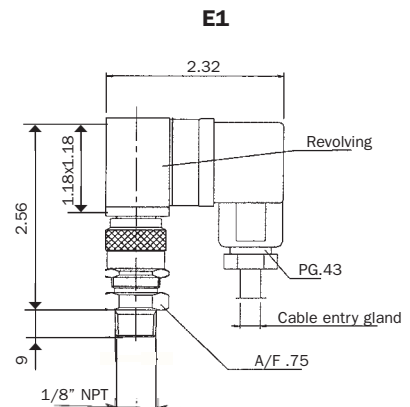
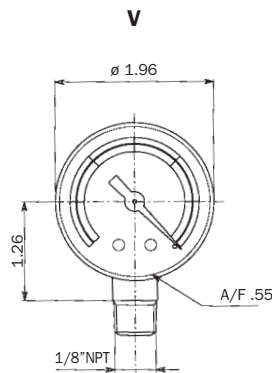
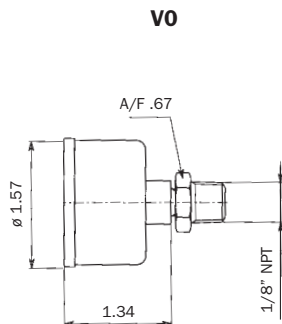
#### E1 Series:

vacuum switch with change-over contacts (setting std. 3 Psi  $\pm$  10%) (adjustable setting: 2.5 to 12.5 Psi)

#### Operational information:

Max voltage: 250 V 50 $\div$ 60 Hz  
Max current: 5 A resistive,  
2 A inductive.

Protection degree IP65



# Selection & installation information

## Filter element types **M Series**

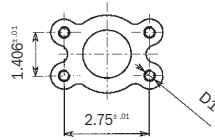
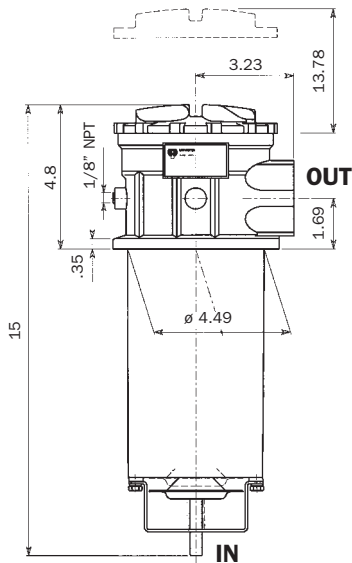
Metal mesh media, available in 25, 60, 90, 250 micron  
Example - **M25, M60, M90 and M250**

**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 250 SIZE

### SF2 250



Filter element	Flow rate gpm option 1"	Flow rate gpm option 1 1/4"	Flow rate gpm option 1 1/2"	Weight Lbs **
M25	26	37	37	6
M60	26	37	40	
M90	26	40	43	
M250	26	40	43	

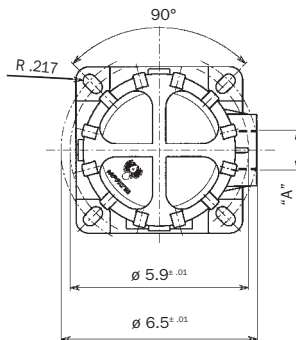
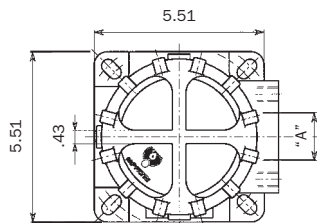
\* Flow rates are based using a mineral oil fluid at 150 SUS.  
\*\* Weight including filter element

## Thread connections

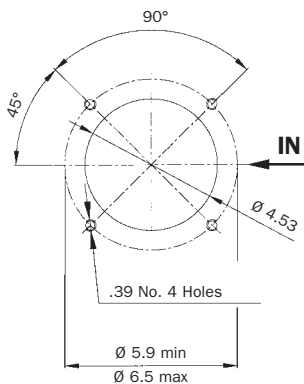
Type	A	Type	A
<b>G1</b>	1 1/2" BSP	<b>G6</b>	SAE 20
<b>G2</b>	1 1/2" NPT	<b>G7</b>	1" BSP
<b>G3</b>	SAE 24	<b>G8</b>	1" NPT
<b>G4</b>	1 1/4" BSP	<b>G9</b>	SAE 16
<b>G5</b>	1 1/4" NPT		

## Flange connections

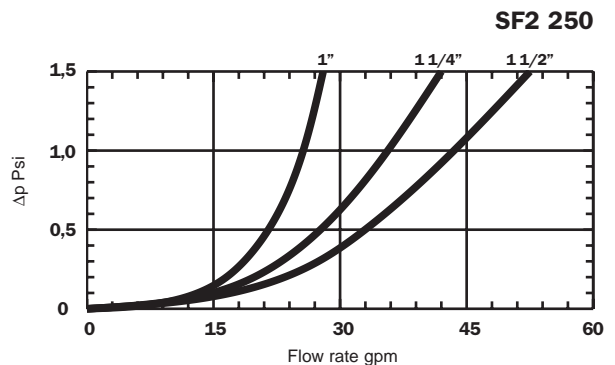
Type	A	D1
<b>F1</b>	1 1/2" SAE 3000PSI/M	M12
<b>F2</b>	1 1/2" SAE 3000PSI/UNC	1/2" UNC



## HOLES ON THE TANK



## Filter housing pressure drop



## 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:

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

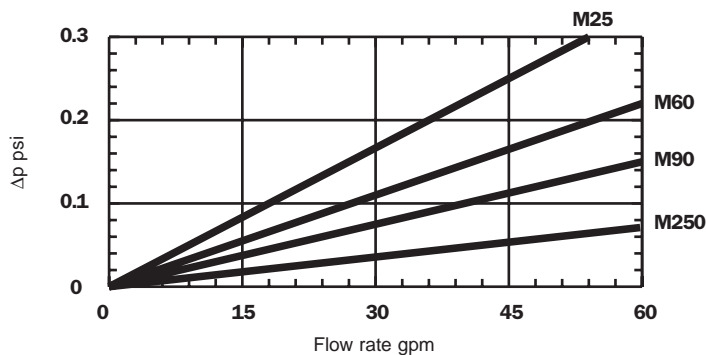
Brochure viscosity = 150 SUS

## Filter assembly sizing example

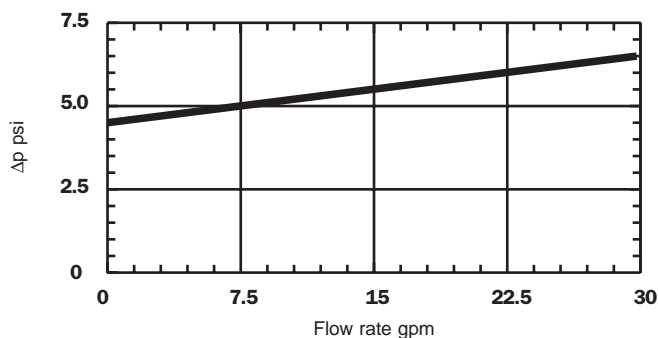
### Selection

- Customer requires a 37 gpm filter assembly • 1" 1/2 port size
- Mineral oil fluid: ISO VG 46 (212 SUS) at 104°F
- M90 - 90 micron filtration
- **Housing pressure drop** - SF2 250 (1" 1/2 port size) with 37 gpm  $\Delta p = 0.75$  psi (see curve on page 5)
- **Filter element pressure drop** (brochure viscosity) - SF2 250 M90 N with 37 gpm  $\Delta p = 0.1$  psi (see curve on page 6)
- **Filter element pressure drop** (working viscosity) - With 212 SUS  $\Delta p_1 = 0.1 \times (212/150) = 0.14$  psi
- **Filter assembly pressure drop**  $\Delta p_{\text{Total}} = \Delta p_{\text{Housing}} + \Delta p_1 \text{ Filter element} = 0.75 + 0.14 = 0.89 \text{ psi}^*$  { \* Acceptable pressure drop as per our recommendations

## Filter element pressure drop



## Bypass valve pressure drop



# Ordering code example

**SF2**

250

A

G1

H

M25

VS

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

## Nominal size

250

## Seals

A Nitrile (Buna-N)  
V Viton

## Port option

Type	SF2 250
G1	1 1/2" BSP
G2	1 1/2" NPT
G3	SAE 4
G4	1 1/4" BSP
G5	1 1/4" NPT
G6	SAE 20
G7	1" BSP
G8	1" NPT
G9	SAE 16
F1	1 1/2" SAE 3000 PSI/M
F2	1 1/2" SAE 3000 PSI/UNC

## Filter condition indicator

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

## Filter elements

M25  
M60  
M90  
M250  
Square wire mesh

## Options

H Without By-pass, without magnet  
R With By-pass and magnet  
S With By-pass, without magnet  
Q Without By-pass and magnet

## Seals (only for filter elements)

N Buna N  
V Viton

**SF**

250

M25

N

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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