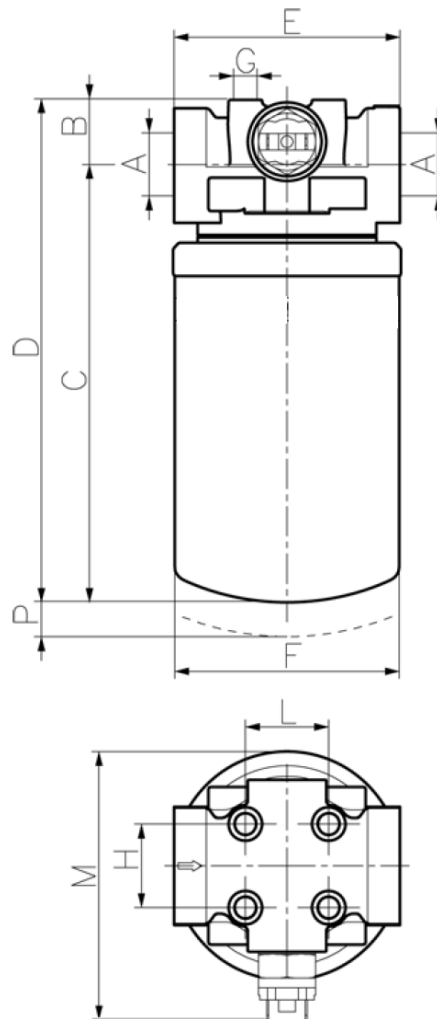


Series SPH 100-180  
 35 BAR (500 PSI)  
 25 BAR (350 PSI) for SPH 180



**Dimensions:**

type	A	B	C	D	E	F	G	H	L	M (O4)	M (E12)	P
SPH 100	3/4"	34 [1.34]	185 [7.28]	219 [8.62]	95 [3.74]	95 [3.74]	M8	38 [1.5]	38 [1.5]	99 [3.90]	112 [4.41]	25 [0.98]
SPH 140	1"	34 [1.34]	260 [10.24]	294 [11.57]	95 [3.74]	95 [3.74]	M8	38 [1.5]	38 [1.5]	99 [3.90]	112 [4.41]	25 [0.98]
SPH 180	1 1/4"	39 [1.54]	330 [12.99]	369 [14.53]	121 [4.76]	117 [4.61]	M10	48 [1.89]	48 [1.89]	130 [5.12]	135 [5.31]	30 [1.18]

Dimensions: mm [inches]

Designs and performance values are subject to change.

# Spin-On Filter

## Series SPH 100-180

### 35 BAR (500 PSI), 25 BAR (350PSI)

### for SPH 180

#### Description:

Eaton's spin-on filters are designed to provide one of the highest cleanliness levels for hydraulic systems, featuring cartridges that are engineered to fit into many leading filter systems on the market.

Series SPH filters are available with the following features:

- Compatible with a variety of mediums such as oils, fuels, emulsions, glycol water and synthetic fluids
- Cartridge pressure is 35 bar (500 psi) & 25 bar (350 psi) for SPH180 size
- Cartridge replacement does not require any tooling or equipment to optimize maintenance efficiency
- Other configurations are available upon request

Eaton's spin-on filters are manufactured and tested according to ISO 2941, ISO 3723 and ISO 2942.

#### 1. Type index:

##### 1.1. Complete filter: (ordering example)

**SPH. 100. 10VG. G. 4. R. -**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

1 | **series:**

SPH = high pressure spin-on filter

2 | **Nominal size:** 100, 140, 180

3 | **filter-material:**

25VG, 10VG, 6VG, 3VG microglass

4 | **connection:**

G = BSPP thread connection

NPT = NPT thread connection

5 | **connection size:**

4 = 3/4" (SPH 100)

5 = 1" (SPH 140)

6 = 1 1/4" (SPH 180)

6 | **bypass valve:**

- = without

R = bypass valve filter Δp 1.75 BAR (25 PSI)

7 | **clogging indicator:**

- = without

O4 = visual differential 1.5 BAR (22 PSI)

E12.1,5 = electrical differential 1.5 BAR (22 PSI)

##### 1.2. Filter element: (ordering example)

**01SH. 100. 10VG**

1	2	3
---	---	---

1 | **series**

SH = spin-on cartridge for high pressure filter

2 | **nominal size:** 100, 140, 180

3 | **filter-material:**

25VG, 10VG, 6VG, 3VG microglass

## Technical data:

operating temperature:	-25°C to +110°C (-13°F to +230°F)
operating medium	mineral oil, other media on request
max. operating pressure:	35 BAR (500 PSI), 25 BAR (350 PSI)
opening pressure by-pass valve:	$\Delta p$ 1.75 BAR (25 PSI)
gasket:	Nitrile (NBR)

Classified under the Pressure Equipment Directive 2014/68/EC for mineral oil (fluid group 2), Article 4, Para. 3.  
Classified under ATEX Directive 2014/34/EC according to specific application (see questionnaire sheet-no. 34279-4).

## Pressure drop flow curves:

Curves are calculated in accordance with ISO 3968 and are valid for clean filtering elements.

$\Delta P$  changes along with the density in presence of an eddy flow, and along with the dynamic viscosity in presence of a laminar flux.

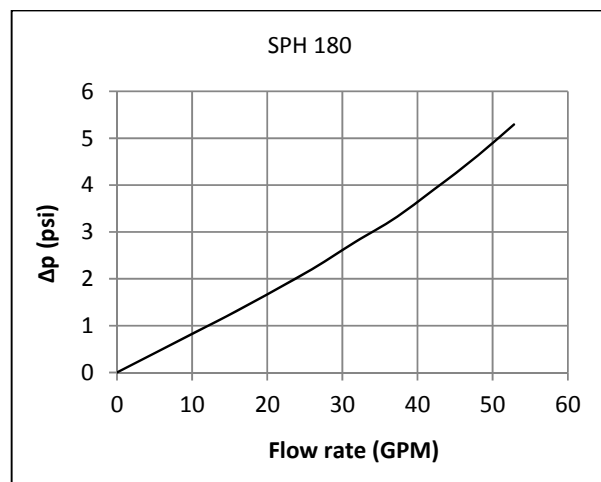
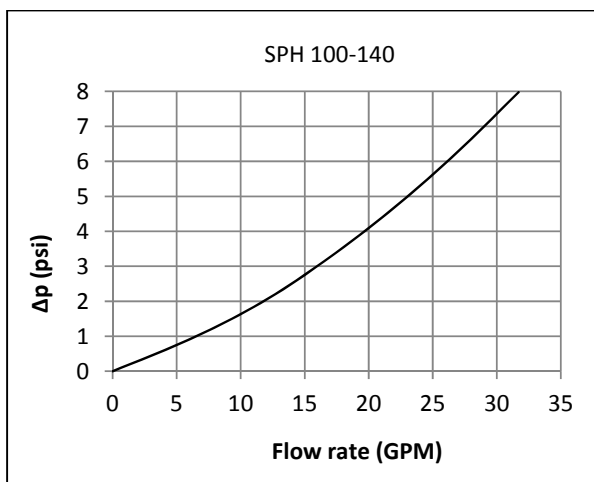
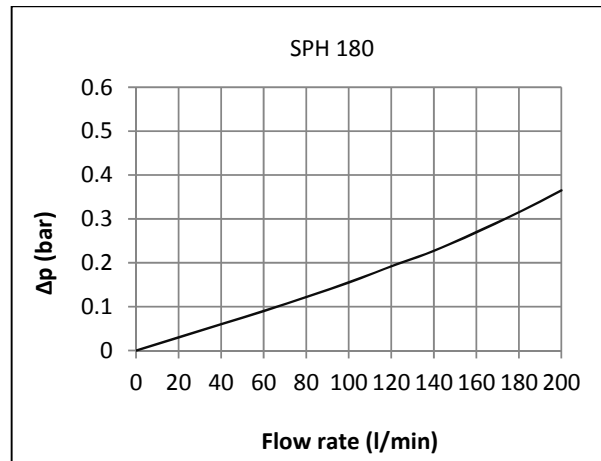
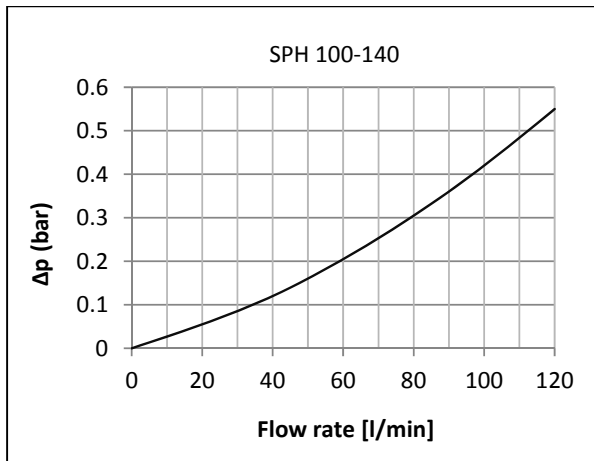
Curves are valid for mineral oils with density of 0,86 kg/dm<sup>3</sup> and a kinematic viscosity of 30 mm<sup>2</sup>/sec (cSt) (139 SUS).

When choosing the filtering medium consider the pressure losses deriving from the flow rate:

Between 0,3-0,5 bar (4,35-7,25 psi) for filters fitted on return line.

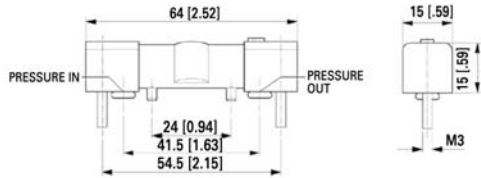
Between 1-1,5 bar (14,5-22 psi) for filters fitted on pressure line.

(The total pressure drop of assembly is to be calculated by sum of housing  $\Delta p$  and the element  $\Delta p$ )

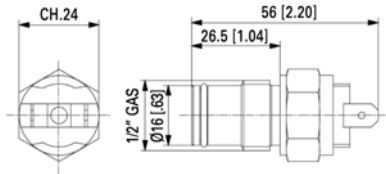


## Clogging Indicator:

Dimensions: mm [inches]

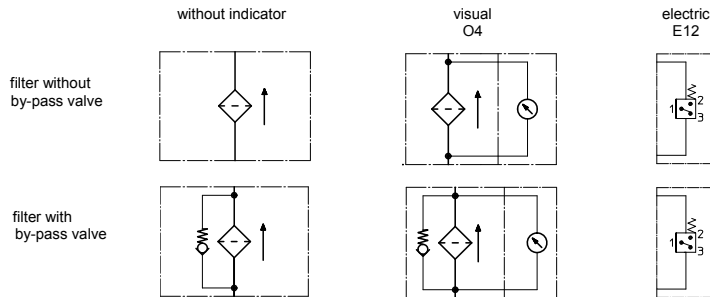


Type: O4 (visual differential)  
 Case: Trogramit  
 Gaskets: o-ring NBR (viton on request)  
 Max working temperature: 110°C (+230°F)  
 Setting: 1.5 bar (22 psi)



Type: E12 (electrical differential)  
 Case: brass  
 Gasket: o-ring  
 Max switched power: 3W  
 Electric contact type: N.A.  
 Protection rate: IP65  
 Max working pressure: 250 bar (3600 psi)  
 Setting: 1.5 bar (22 psi)

## Symbols:



## Test methods:

Filter elements are tested according to the following ISO standards:

- ISO 2941 Verification of collapse/burst resistance
- ISO 2942 Verification of fabrication integrity
- ISO 2943 Verification of material compatibility with fluids
- ISO 3723 Method for end load test
- ISO 3724 Verification of flow fatigue characteristics
- ISO 3968 Evaluation of pressure drop versus flow characteristics
- ISO 16889 Multi-pass method for evaluating filtration performance

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