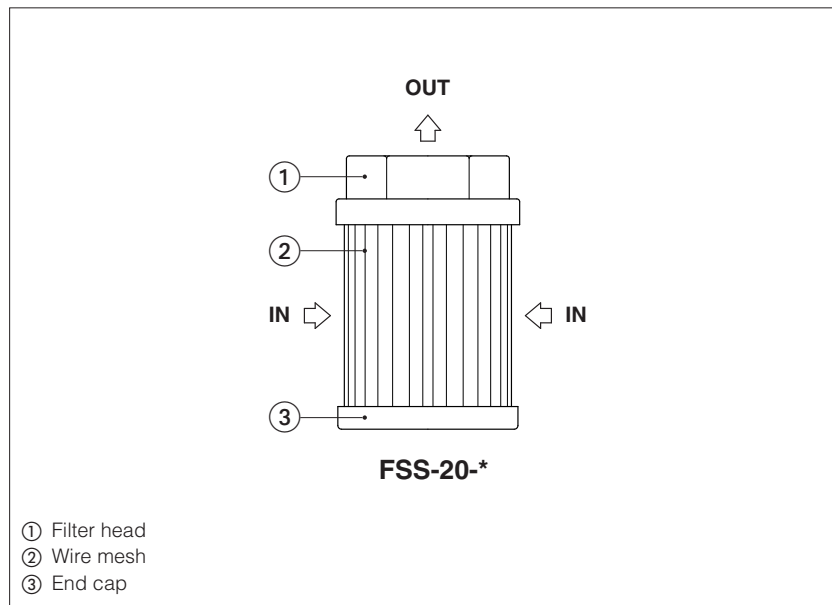


## Suction filters type FSS

Threaded ports - max flow 450 l/min



**FSS** suction filters are designed to protect pumps from ingestion of solid particles and coarse contamination present in the oil tank, which may cause heavy damage and seizures.

They are designed to be screwed onto the pumps suction line.

FSS filters are available with following features:

- four sizes with BSPP threaded ports, from 1/2" to 3"
- three different lengths with max flow up to 450 l/min
- wire mesh 125  $\mu\text{m}$  (c)

FSS filters are without by-pass valve.

### 1 MODEL CODE

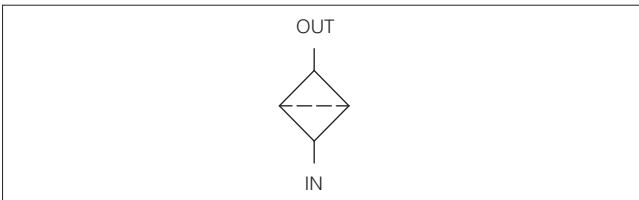
<b>FSS</b>	-	<b>10</b>	-	<b>A</b>	-	<b>W125</b>	-	<b>00</b>	-	<b>N</b>	<b>**</b>																				
Suction filter											Series number																				
<p><b>Filter size:</b></p> <p><b>10</b> <b>20</b> <b>30</b> <b>40</b></p>																															
<p><b>Filter</b>                      <u>Max flow [l/min] (1)</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>length:</th> <th>FSS-10</th> <th>FSS-20</th> <th>FSS-30</th> <th>FSS-40</th> </tr> </thead> <tbody> <tr> <td><b>A</b> =</td> <td>20</td> <td>38</td> <td>85</td> <td>330</td> </tr> <tr> <td><b>B</b> =</td> <td>-</td> <td>60</td> <td>125</td> <td>450</td> </tr> <tr> <td><b>C</b> =</td> <td>-</td> <td>-</td> <td>200</td> <td>-</td> </tr> </tbody> </table>												length:	FSS-10	FSS-20	FSS-30	FSS-40	<b>A</b> =	20	38	85	330	<b>B</b> =	-	60	125	450	<b>C</b> =	-	-	200	-
length:	FSS-10	FSS-20	FSS-30	FSS-40																											
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<b>C</b> =	-	-	200	-																											
<p><b>Filtration rating:</b></p> <p><b>W125</b> = wire mesh 125 <math>\mu\text{m}</math></p>																															
<p><b>By-pass:</b></p> <p><b>N</b> = without by-pass</p>																															
<p><b>Port size:</b></p> <p>BSPP threaded:</p> <table style="width: 100%;"> <tr> <td>FSS-10-A <b>00</b> = G 1/2"</td> <td>FSS-20-B <b>02</b> = G 1"</td> </tr> <tr> <td>FSS-20-A <b>01</b> = G 3/4"</td> <td>FSS-30-B <b>04</b> = G 1 1/2"</td> </tr> <tr> <td>FSS-30-A <b>03</b> = G 1 1/4"</td> <td>FSS-40-B <b>07</b> = G 3"</td> </tr> <tr> <td>FSS-40-A <b>06</b> = G 2 1/2"</td> <td>FSS-30-C <b>05</b> = G 2"</td> </tr> </table>												FSS-10-A <b>00</b> = G 1/2"	FSS-20-B <b>02</b> = G 1"	FSS-20-A <b>01</b> = G 3/4"	FSS-30-B <b>04</b> = G 1 1/2"	FSS-30-A <b>03</b> = G 1 1/4"	FSS-40-B <b>07</b> = G 3"	FSS-40-A <b>06</b> = G 2 1/2"	FSS-30-C <b>05</b> = G 2"												
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(1) Max flow rates are performed in following conditions:

- clean filter element
- $\Delta p = 0,015$  bar
- mineral oil with viscosity 30 mm<sup>2</sup>/s

In case of different conditions see Q/ $\Delta p$  diagrams at section 5

**2 HYDRAULIC SYMBOL** (representation according to ISO 1219-1)



**3 GENERAL CHARACTERISTICS**

Assembly position / location	Any position	
Differential collapse pressure [bar]	1	
Ambient temperature range	-20°C ÷ +70°C	
Storage temperature range	-20°C ÷ +80°C	
Materials	Filter head	Nylon
	Filter end cap	Carbon steel, zinc plated
	Filter Mesh	Stainless steel AISI 304

**4 HYDRAULIC FLUIDS** - for other fluids not included in below table, consult our technical office

Recommended fluid temperature	-25°C ÷ +100°C, with HFC hydraulic fluids = +10°C ÷ +50°C	
Recommended viscosity	15 ÷ 100 mm <sup>2</sup> /s - max allowed range 2.8 ÷ 500 mm <sup>2</sup> /s	
<b>Hydraulic fluid</b>	<b>Classification</b>	<b>Ref. Standard</b>
Mineral oils	HL, HLP, HLPD, HVL, HVLDP	DIN 51524
Flame resistant without water	HFDU, HFDR	ISO 12922
Flame resistant with water	HFC	

**5 FILTER SIZING**

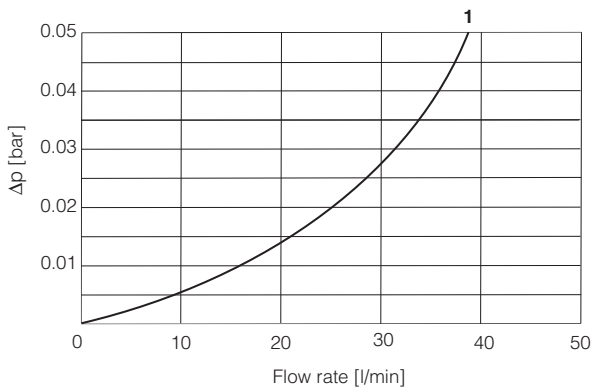
Suction filters must be largely sized to avoid the pumps cavitation. In the best conditions the  $\Delta p$  should not exceed 0.015 bar

**5.1 Q/ $\Delta p$  DIAGRAMS**

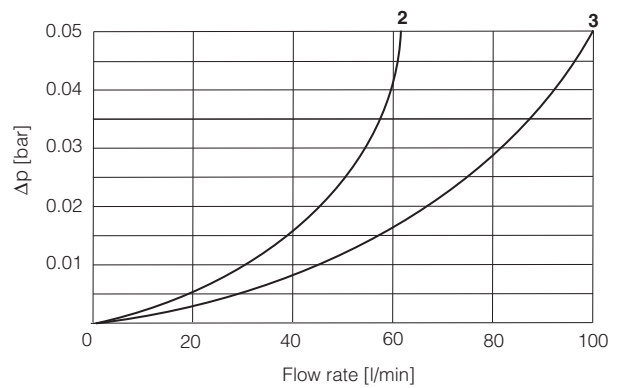
In following diagrams are reported the  $\Delta p$  characteristics of filter based on mineral oil with density 0,86 kg/dm<sup>3</sup> and viscosity 30 mm<sup>2</sup>/s. In case of different viscosity the effective  $\Delta p_E$  is given by the formula:

$$\Delta p_E = \Delta p \times \frac{\text{viscosity}}{30}$$

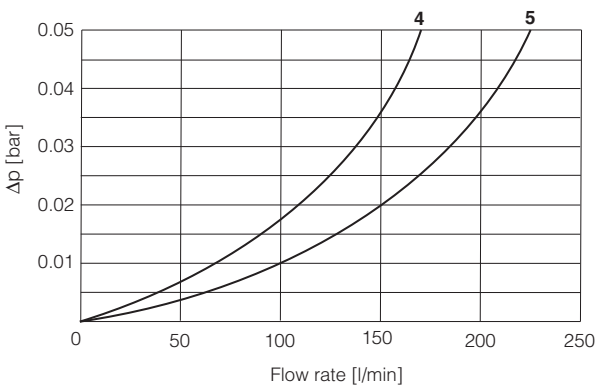
$\Delta p_E$  = pressure drop calculated at the effective viscosity  
 $\Delta p$  = pressure drop reported in the below diagrams  
 Viscosity = effective fluid viscosity in the working condition (mm<sup>2</sup>/s)



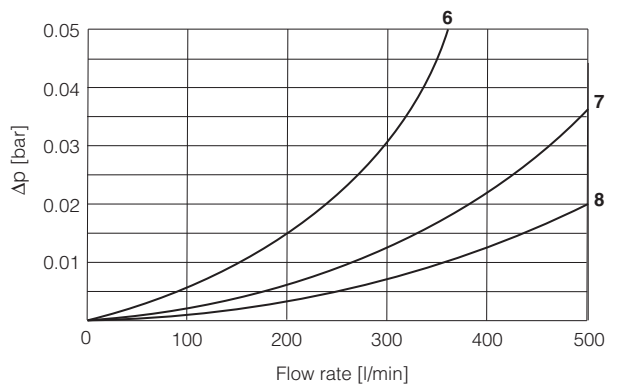
**1** = FSS-10-A



**2** = FSS-20-A  
**3** = FSS-20-B

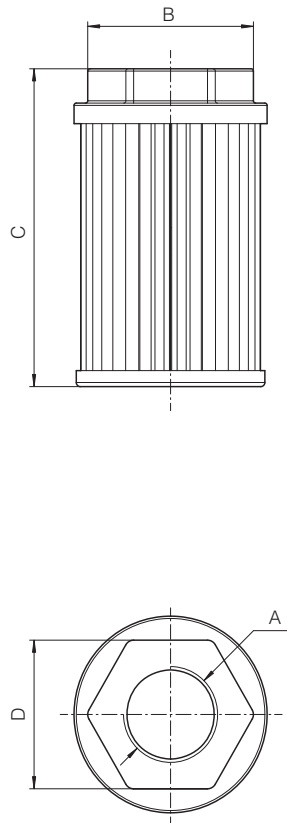


**4** = FSS-30-A  
**5** = FSS-30-B



**6** = FSS-30-C  
**7** = FSS-40-A  
**8** = FSS-40-B

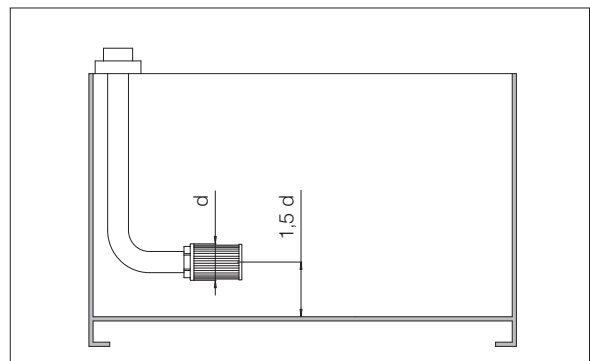
**6** INSTALLATION DIMENSIONS OF FSS FILTERS [mm]



Code	A	B	C	D	Mass (Kg)
FSS-10-A	1/2" BSPP	46	106	36	0,1
FSS-20-A	3/4" BSPP	64	109	50	0,21
FSS-20-B	1" BSPP		139		0,23
FSS-30-A	1 1/4" BSPP	86	200	65	0,37
FSS-30-B	1 1/2" BSPP		260		0,45
FSS-30-C	2" BSPP		212		0,57
FSS-40-A	2 1/2" BSPP	150	272	110	1,02
FSS-40-B	3" BSPP		1,06		

**7** INSTALLATION AND COMMISSIONING

During the filter installation, pay attention that the filter remains below the minimum oil level in the tank.  
 A minimum distance between the filter and the tank bottom must be considered as represented in the aside drawing.



## 8 MAINTENANCE

The filter must be replaced according to the system manufacturer's recommendations



**WARNING:** The dirty filters cannot be cleaned and re-used. They are classified as "dangerous waste material", then they must be disposed of by authorized Companies, according to the local laws.

### 8.1 FILTER IDENTIFICATION

