



# Series

# CSD

35 bar  
500 psi

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HYDRAULICS

## DESCRIPTION

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Many years of in-field experience have shown the necessity of more and more efficient controls on the contamination level of hydraulic fluids and fuels.

With this goal uppermost in its mind, and thanks to sophisticated design patterns and the use of cutting-edge materials and technologies, FAI FILTRI has engineered a complete series of spin-on filters, in different models and sizes, designed to meet a wide array of filtration and operating requirements, in order to allow a more effective control of contamination levels in hydraulic, lubricating, engine circuits, etc.

CSD filtering cartridges, engineered to support medium pressure values up to max. **50 bar**, provide a valid solution for filtration problems, granting their best performances when fitted into hydraulic drives, in presence of supercharged hydrostatic drives, earthworks machines, compressors, converters, hydraulic systems return or exhaust lines.

The fundamental characteristic of these elements is the possibility, for any clogged filter, to be easily replaced, by a quick and clean procedure, condition that has to be considered of great importance in working contexts where highly deteriorated

environmental conditions usually occur. They can support flow rates up to 140 l/min.

FAI FILTRI spin-on cartridges, equipped with new generation "A" filtering media, can specifically grant high standards of performance even in the hardest conditions.

"A" type elements with absolute filtration power of 3, 6, 10, 25 micron ( $\times 200$ ), are formed by inorganic impregnated and resin bonded inert micro-fibers, supported upstream and downstream. The result is a very compact filtering core which ensures the resistance of the media itself to deformation, distortion and strain, preventing any contaminants to get released, thus improving filtering performances and allowing contaminants to accumulate efficiently, also in the event of phenomena such as high differential pressure and water hammering derived from cold starts and discharge flow rates.

The above mentioned features make the FAI FILTRI spin-on filters consistent with the use of hydraulic, lubricating oils, fuels, glycol water, emulsions and most synthetic fluids.

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## TECHNICAL DATA

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### Materials

- Cast aluminum flange
- Sinned and painted sheet steel vessel
- Perforated/drilled supporting pipes and galvanized steel end-caps

### Cartridges pressures values

Max operating pressure: **35 bar (25 bar for model CSD 400)**

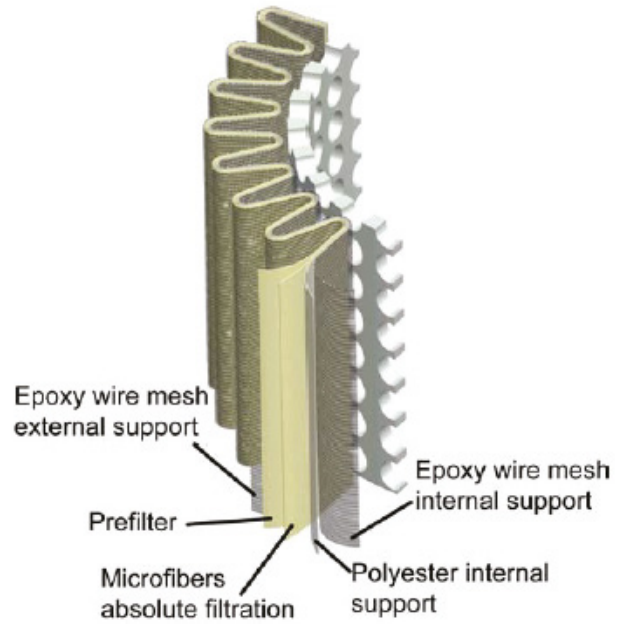
Impulse test in compliance with ISO 3724: **from 0-35-0 bar 1Hz 50.000 min. cycles**

**from 0-25-0 bar 1Hz 50.000 min. cycles (CSD 400)**

## Filtering elements

- “P” 10 and 25 nominal micron made of  $\beta_x > 2$  impregnated cellulose fibers
- “A” 3, 6, 10, 16 and 25 absolute micron made of  $\beta_x \geq 200$  reinforced, inorganic fibers with polyester protections

New generation  
“A” filtering  
elements structure



## Retention power

In compliance with ISO 4572 Multi-pass test method

Filter element	Dimensions for $\beta(\mu\text{m})$ Value				Filtering rapports			Final $\Delta P$ (bar)
	$\beta \geq 2$ 50%	$\beta \geq 20$ 95%	$\beta \geq 75$ 98,7%	$\beta \geq 200$ 99,5%	$\beta_2$	$\beta_{10}$	$\beta_{20}$	
A03	-	2	2.4	3	20	>10000	>10000	7
A06	-	3	4.6	6	8	>2000	>10000	7
A10	3	6	7.8	10	1.5	$\geq 200$	>1000	7
A16	7	9	12	16	-	>25	>5000	7
A25	13	19	22	25	-	>1.5	>35	7
P10	10	>30	>30	-	1	2	4.5	4
P25	25	>30	>30	-	1	1	1.3	4

## International standards for fluids contamination control

ISO 4406 Contamination Codes		NAS 1638 Corresponding class	Suggested filtration	Application fields
5 µm	15 µm	-	$\beta_x \geq 200$	
12	9	3	1 - 2	High accuracy servo-plants - laboratory
15	11	6	3 - 6	Servo - plants - robotics - aeronautics
16	13	7	10 - 12	High sensitivity plants - where high standards of operating reliability are required
18	14	9	12 - 15	
19	16	10	15 - 25	General plant engineering with limited reliability
21	18	12	25 - 40	Low pressure plants - desultory services

## Filtering elements

- Differential collapsing pressure of the filtering elements tested in compliance with ISO 2941: **20 bar**
- Resistance to axial deformation tested in compliance with ISO 3723
- Manufacturing conformity and determination/assessment of the first bubble point in compliance with ISO 2942

## Filtering surface

Type	P10/P25	A03/A06/A10/A16/A25
CSD - 020	1090 cm <sup>2</sup>	940 cm <sup>2</sup>
CSD - 050	2180 cm <sup>2</sup>	1680 cm <sup>2</sup>
CSD - 060	2720 cm <sup>2</sup>	2090 cm <sup>2</sup>
CSD - 070	3700 cm <sup>2</sup>	2830 cm <sup>2</sup>
CSD - 400	8600 cm <sup>2</sup>	5010 cm <sup>2</sup>

## By-pass valves

**No by-pass valve** - in case a valve is present it is fitted directly on the head or cartridge casing.

### Gaskets

- Buna-N "A" type gaskets/seals
- Viton "V" type gaskets/seals

### Couplings

For the different coupling see order forms Specifically on request (custom-made)

### Operating temperatures

From -25°C up to +110°C.

For different temperatures please contact our technical department

### Flow rates

Up to 180 l/min.

Choose the cartridge according to the filtration and to the recommended pressure drop.

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## PRESSURE DROP

Curves are applicable to mineral oil with a dynamic viscosity of 30 mm<sup>2</sup>/sec. (cSt).

Δ P changes along with the values of dynamic viscosity according to the following formulas:

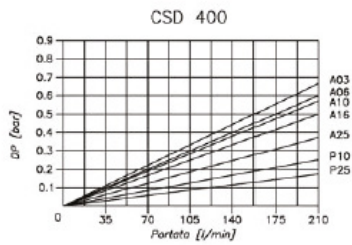
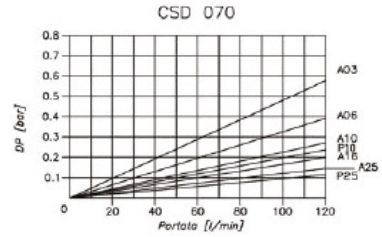
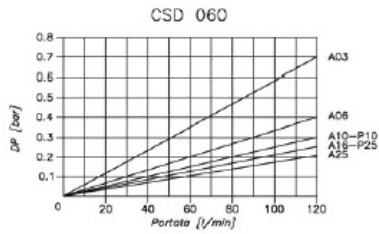
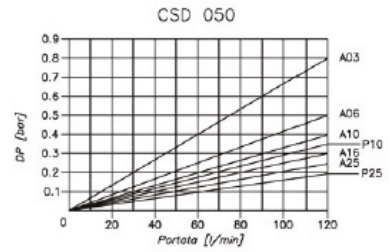
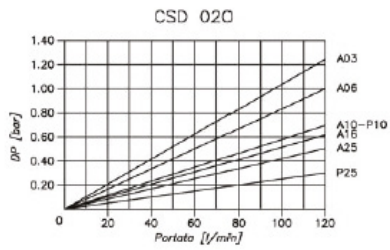
- Dynamic viscosity variations ≤5

$$\Delta P_1 = \frac{v_1}{v} \Delta P$$

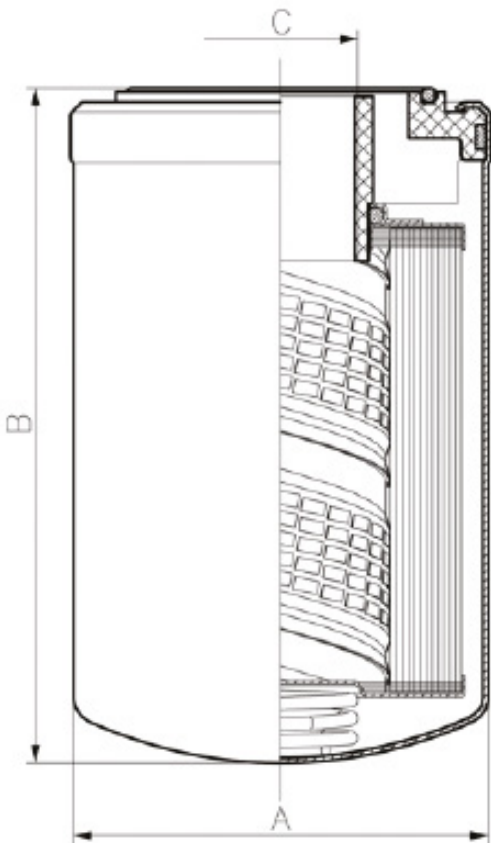
- Dynamic viscosity variations >5

$$\Delta P_1 = \frac{\frac{v_1}{v} + \sqrt{\frac{v_1}{v}}}{2} \Delta P$$

In both formulas **Δ P** stands for the pressure loss calculated on the curves, **v** stands for the reference dynamic viscosity (30 mm<sup>2</sup>/sec); **Δ P<sub>1</sub>** is the pressure loss to be calculated and **v<sub>1</sub>** stands for the actual dynamic viscosity of the tested fluid.

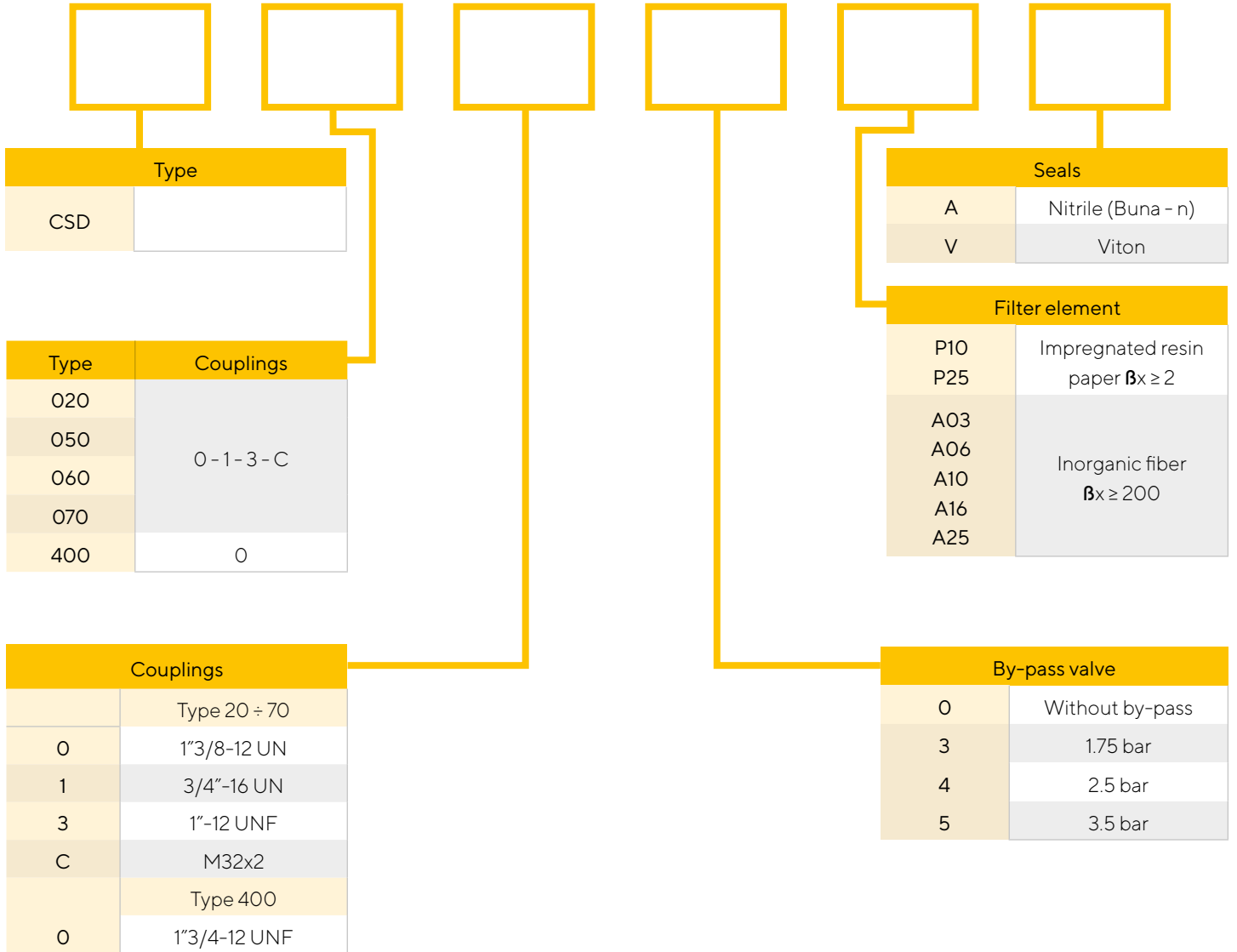


## DIMENSIONAL INFORMATION



Type	Flow rate [l/min]	A	B	C
CSD 020	50		100	
CSD 050	100	95.6	152	See order code
CSD 060	120		180	
CSD 070	140	228		
CSD 400	180	117	295	

# ORDER CODE





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