



Filter Sizing Information

FOS Series Synthetic Media Cartridges

Cartridge Flow Rate (US GPM) vs. Viscosity Data for 2 PSI and 5 PSI Initial Pressure Drops

CARTRIDGE	33 SUS 2 CS		46 SUS 6 CS		59 SUS 10 CS		98 SUS 20 CS		142 SUS 30 CS		187 SUS 40 CS		233 SUS 50 CS	
	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi
FOS-512PL25	80	80	80	80	80	80	80	80	80	80	69	80	55	80
FOS-718PL25	100	100	100	100	100	100	100	100	100	100	100	100	92	100
FOS-614PL05	95	100	91	100	87	100	75	100	62	100	49	100	36	90
FOS-618PL05	100	100	100	100	100	100	100	100	100	100	80	100	64	100
FOS-618PLP8	100	100	100	100	100	100	52	100	34	85	26	65	20	51
FOS-618PL1/2	100	100	100	100	68	100	34	185	22	55	17	43	13	34
FOS-636PL05	200	200	200	200	200	200	200	200	200	200	184	200	160	200
FOS-636PLP8	200	200	200	200	200	200	104	200	68	170	52	130	41	102
FOS-636PL1/2	200	200	200	200	136	200	68	170	44	110	34	86	27	68

CARTRIDGE	348 SUS 75 CS		463 SUS 100 CS		927 SUS 200 CS		1390 SUS 300 CS		1853 SUS 400 CS		2316 SUS 500 CS		4632 SUS 1000 CS	
	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi	2 psi	5 psi
FOS-512PL25	36	80	27	68	13	33	9	23	6	16	5	13	3	7
FOS-718PL25	62	100	46	100	23	58	15	38	11	29	9	23	5	11
FOS-614PL05	30	70	23	56	11	28	7	17	6	14	4	11	2	6
FOS-618PL05	42	100	32	80	16	40	10	25	8	20	6	15	3	8
FOS-618PLP8	14	35	10	25	5	13	3	8	3	8	2	5	1	3
FOS-618PL1/2	9	23	7	18	3	8	2	5	2	5	1	3	1	2
FOS-636PL05	84	200	64	160	32	80	21	53	16	40	12	30	6	15
FOS-636PLP8	28	70	21	53	10	25	7	18	5	13	4	10	2	5
FOS-636PL1/2	18	45	14	35	7	18	4	10	3	8	3	8	1	3

Notes: 1. Figures in table are flow rates (US GPM) that will cause a pressure drop of 2 or 5 psi across the cartridge.
 2. These flow curves are for the cartridges only. To determine additional pressure losses caused by vessel components, see Velcon Form #1711

Housing Selection Guidelines

FILTER SIZING

1. Select the desired filter cartridge type and micrometer (micron) rating.
2. Determine the viscosity at the operating temperature for the fluid being filtered. See Bulletin 1533.
3. From the cartridge flow rate data estimate the flow rate that will result in a 2 psi differential pressure.
4. Divide the total desired flow rate by the flow rate determined in 3, above. This will give the required number of cartridges.
5. Select a filter housing that will hold the required number of cartridges.

NOTE: For recirculating lube and hydraulic oil systems where contaminant generation will be slight, it is common practice to size for a 5 psi initial pressure drop.

CONTAMINANT CAPACITY

Velcon recommends filter cartridges be changed when they reach 25 psi differential or in accordance with your company's fuel handling procedures. The amount of contaminant a cartridge will hold before that point depends on many factors, the key one being the nature of the contaminant itself. A hard, particulate contaminant has very different filtration characteristics than a soft, gel-like contaminant.

Accurately estimating the life of a cartridge in a given application, therefore, is extremely difficult. However, when a cartridge has been sized for an initial pressure drop of 2 psi, the following rule of thumb is often employed for particulate contaminants: A 1 or 2 micrometer cartridge will hold up to 3 pounds of contaminant, and a 5 micrometer or greater cartridge will hold up to 5 pounds.

REDUCED FLOW RATE EFFECTS

The filter sizing above is based on a 2 psi initial pressure differential which is a widely accepted industry standard. However, where heavy contaminant loads are anticipated, a substantial savings in operating costs for cartridges and filter change labor can be achieved by over-sizing the filter. **Reducing the flow rate per cartridge in half will increase the contaminant capacity of each cartridge by 30 to 50 percent. This means that doubling the size of the filter will increase the total throughput between cartridge changeouts by as much as three times.**



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