



Graver Technologies

## Technical Brief

LIQUID PROCESS FILTERS GRAVER TECHNOLOGIES 1-888-353-0303

[www.gravertech.com](http://www.gravertech.com)

TB-012

# Housing Sizing Guidelines for Graver High Flow Filter Cartridges

Graver High Flow filters, with their large geometry, have high flow capability and tremendous dirt holding capacity. Like standard size filters, however, a variety of factors must be considered when sizing a new housing for a customer. The following should be considered:

- Desired system flow rate
- Dirt loading in parts per million (ppm)
- Fluid viscosity
- Temperatures
- Desired time between changeouts

Graver High Flow literature provides a recommended **MAXIMUM** flow rate for the High Flow elements as follows:

Size	Maximum Flow Rate per Element
20"	175 GPM
40"	350 GPM
60"	500 GPM

Does that mean you should always size the system to flow 500 GPM through a 60" element. No! Remember that other factors must be considered.

Assuming water like viscosity at ambient temperature, the most important consideration becomes the dirt or particle load in the fluid. We will also make the assumption that most customers want to get at least 20 to 30 days between filter changeouts. Based on this, you can use the following charts to guide you with proper sizing. Let's walk through an example:

1. Customer has a system flow rate of 900 GPM and has 0.3 ppm dirt load.
2. Locate 900 GPM in the first column of the 40" element chart shown below.
3. Moving across, you see the max ppm for a 7 around housing is .22 ppm. You can choose this 7 around housing, but most likely filter life will be shorter than 20-30 days.
4. Alternatively you could size a 12 around housing which could handle up to 0.37 ppm and life may be longer.
5. Another alternative is to size with 60" elements – find 900 GPM and move right until you locate the system ppm or greater. In this case a 60", 7 around housing is more than adequate.

*Remember that Graver technical support is available to assist you. When in doubt, give us a call.*

### Graver High Flow 40" elements - max ppm for 20-30 days life

Flow (GPM)	Number of Elements per Housing					
	1	3	4	7	12	19
50	0.56	1.67	2.22	3.89	6.67	10.56
100	0.28	0.83	1.11	1.94	3.33	5.28
200	0.14	0.42	0.56	0.97	1.67	2.64
350	0.08	0.24	0.32	0.56	0.95	1.51
700		0.12	0.16	.028	0.48	0.75
900		0.09	0.12	0.22	0.37	0.59
1050		0.08	0.11	0.19	0.32	0.50
1200			0.09	0.16	0.28	0.44
1400			0.08	0.14	0.24	0.38
1500				0.13	0.22	0.35
2000				0.10	0.17	0.26
2450				0.08	0.14	0.22
3500					0.10	0.15
4200					0.08	0.13
6650						0.08
350	350.0	1050.0	1400.00	2450.0	4200.0	6650.0

### Graver High Flow 60" elements - max ppm for 20-30 days life

Flow (GPM)	Number of Elements per Housing					
	1	3	4	7	12	19
50	0.83	2.50	3.33	5.83	10.00	15.83
100	0.42	1.25	1.67	2.92	5.00	7.92
200	0.21	0.63	0.83	1.46	2.50	3.96
500	0.08	0.25	0.33	0.58	1.00	1.58
700		0.18	0.24	0.42	0.71	1.13
900		0.14	0.19	0.32	0.56	0.88
1000		0.13	0.17	0.29	0.50	0.79
1200		0.10	0.14	0.24	0.42	0.66
1400		0.09	0.12	0.21	0.36	0.57
1500		0.08	0.11	0.19	0.33	0.53
2000			0.08	0.15	0.25	0.40
2500				0.12	0.20	0.32
3500				0.08	0.14	0.23
4200					0.12	0.19
6000					0.08	0.13
7500						0.11
9500						.008
500	500.0	1500.0	2000.00	3500.0	6000.0	9500.0

For further information, contact Graver Technologies at 800-510-0932 or [www.gravertech.com](http://www.gravertech.com) or your local Graver Technologies representative.