Liquid Flow Rates for Headline Products

Headline filter housings are suitable for liquid service applications. The chart below is provided for basic flow guidance only.

Key Points Explained

1. **Materials Used**

   - The filter housings are made with Stainless Steel (SS), PTFE, and Sintered PEL elements.
   - These materials make the housings suitable for liquid filtration applications, especially where corrosion resistance and durability are required.

2. **Flow Guidance Chart**

   - The chart provides basic guidance for flow rates through the filters.
   - It's intended as a general reference, not an exact engineering specification.

3. **Comparison with Typical Filter Housings**

   - Most standard liquid filter housings in the industry are rated for only about:
     - 250 PSIG
   - Therefore, these Headline housings provide significantly higher pressure capacity, making them suitable for high-pressure processes.

DOE Liquid Cartridges

By using a DOE element adapter, industry-standard 10" and 20" liquid elements can be installed in our 150 (10") and 160 (20") series stainless steel housings, allowing pressure ratings of 1,500 PSIG and higher. For comparison, most industry-standard liquid housings are limited to 250 PSIG.

The attached flow chart remains a reliable rule of thumb for the standard 10" and 20" liquid elements.

In Simple Terms

This filtration system:

- Works with **common filter cartridges**
- Built from **durable, chemical-resistant materials**
- Can operate at **much higher pressures** than typical filter housings.

Water Flow Rates in LPM at 1.5 PSI Drop

Stainless Steel Micron Size	PTFE Micron Size	PEL Micron Size	Housing Model Series					
			110 315 Series	120 315L Series	130 360 Series	140 370 Series	150 385AHP Series	160 390AHP Series
005 (0.5 Micron)	--	--	.0	0.2	0.3	0.7	2.0	4.0
01 (1 Micron)	--	--	0.2	0.3	0.82	2.0	5.0	9.9
03 (3 Micron)	03 Micron	--	0.4	0.7	1.6	3.8	9.9	16.6
10 (10 Micron)	--	10 Micron	1.0	1.6	3.9	7.0	20.0	23.3
25 (25 Micron)	25 Micron	25 Micron	1.3	1.7	5.3	8.3	21.6	25.0
50 (50 Micron)	--	--	1.4	1.8	5.6	8.8	23.0	26.0
100 (100 Micron)	--	75 Micron	1.5	2.1	5.9	9.9	23.3	26.6
200 (200 Micron)	--	--	1.8	2.6	7.4	11.7	29.0	33.2

Above flow rates are liters per minute.

Support Cores

Support cores are recommended for liquid filtration applications when using disposable filter elements. They help reinforce the filter cartridge, preventing collapse or deformation under liquid pressure.
However, support cores should not be used with fast-loop housings, including:

- 126IL-3
- 127IL-3
- 136IL-3
- 146IL-3

Support cores are only intended for traditional T-type filter housings.

Flow Rates

Flow rates in filter housings depend largely on pressure drop across the filter and liquid viscosity.
Key guidelines:

- Flow rate is proportional to pressure drop.
  - If the system can tolerate an initial pressure drop of 3 psi, the flow rate can be approximately doubled compared to lower pressure-drop conditions.
- Flow rate is inversely proportional to viscosity.
  - Higher-viscosity liquids (thicker fluids) will reduce flow rate.
  - Lower-viscosity liquids (thinner fluids) will flow more easily, increasing flow rate.

Element Usage Advisory

Borosilicate Glass Microfiber filter elements are not recommended for liquid service in T-type housings.
This is typically because these elements are fragile and better suited for gas filtration, and may degrade or fail in liquid filtration environments.

Disposable In-Line Filters

Selecting the appropriate DIF model and ensuring proper installation, users can achieve efficient point-of use liquid filtration while maintaining system integrity. This flexibility makes DIF filters a versatile option for applications where both gas and liquid filtration performance is needed.

Disposable In-Line Filters –Liquid Flow Rate Charts

LIQUID FLOW RATES (12-16-□) - MINI

DIF Model Number	Filtration Efficiency 98% Removal Rating	Water Flow Rates with 1.5 PSID
DIF-MN30	0.3 micron	0.6 GPH / 0.04 LPM
DIF-MN40	1 micron	1.6 GPH / 0.12 LPM
DIF-MN50	2 micron	3.3 GPH / 0.25 LPM
DIF-MN60	8 micron	6.5 GPH / 0.49 LPM
DIF-MN70	25 micron	8.0 GPH / 0.60 LPM
DIF-MN80	75 micron	8.5 GPH / 0.64 LPM

LIQUID FLOW RATES – (12-32-□) - STANDARD

DIF Model Number	Filtration Efficiency 98% Removal Rating	Water Flow Rates with 1.5 PSID
DIF-BN30 or BK30	0.3 micron	1.3 GPH / 0.10 LPM
DIF-BN40 or BK40	1 micron	3.2 GPH / 0.24 LPM
DIF-BN50 or BK50	2 micron	6.6 GPH / 0.50 LPM
DIF-BN60 or BK60	8 micron	13.0 GPH / 0.98 LPM
DIF-BN70 or BK70	25 micron	16.0 GPH / 1.21 LPM
DIF-BN80 or BK80	75 micron	17.0 GPH / 1.29 LPM

LIQUID FLOW RATES – (12-57-□) - INTERMEDIATE

DIF Model Number	Filtration Efficiency 98% Removal Rating	Water Flow Rates with 1.5 PSID
DIF-IN30	0.3 micron	2.6 GPH / 0.19 LPM
DIF-IN40	1 micron	6.4 GPH / 0.48 LPM
DIF-IN50	2 micron	13.2 GPH / 1.00 LPM
DIF-IN60	8 micron	26.0 GPH / 1.97 LPM
DIF-IN70	25 micron	32.0 GPH / 2.42 LPM
DIF-IN80	75 micron	34.0 GPH / 2.57 LPM

LIQUID FLOW RATES – (25-64-□) - LARGE

DIF Model Number	Filtration Efficiency 98% Removal Rating	Water Flow Rates with 1.5 PSID
DIF-LN30 or LK30	0.3 micron	13.0 GPH / 0.98 LPM
DIF-LN40 or LK40	1 micron	26.0 GPH / 19.7 LPM
DIF-LN50 or LK50	2 micron	62.0 GPH / 4.70 LPM
DIF-LN60 or LK60	8 micron	84.0 GPH / 6.36 LPM
DIF-LN70 or LK70	25 micron	95.0 GPH / 7.20 LPM
DIF-LN80 or LK80	75 micron	118.0 GPH / 8.94 LPM