FiberFlo®

Hollow Fiber Cartridge Filter

Housing Installation

Housings for the FiberFlo® HF should be installed as shown in Diagrams 1 or 2, with the appropriate isolation valves and pressure gauges. Diagram 1 is an example of a single filter element housing. If the filter and housing assembly are to be integrity tested, each housing should have the additional valves and fittings as shown in Diagram 3.

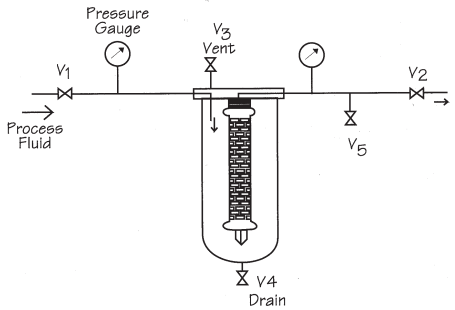

Diagram 1 – Single Housing Filter

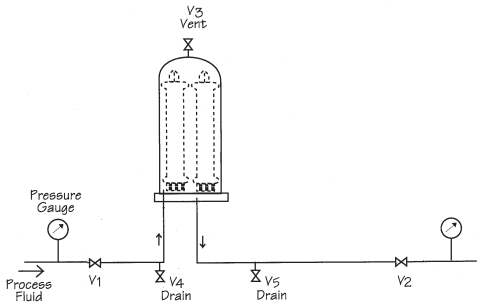

Diagram 2 – Multiple Filter Housing

Filter Cartridge Installation

1. Shut off flow by closing valves V_1 and V_2. To release pressure open valves V_3 and V_5. Do not attempt to remove the housing bowl/cover until pressure gauges read "0" psi.
2. Remove the housing bowl/cover and remove the old filter.
3. Open the new filter's plastic bag at the O-ring end of the cartridge (Note: Do not touch the filter directly as this will cause contamination). Wet the O-rings with distilled water or the solution being filtered. With the new filter still in the bag, push the cartridge up into the head of the housing. Use a twisting motion until the filter cartridge is firmly in place to ensure proper seating of the filter O-rings.
4. Remove the plastic bag from the filter and replace the housing bowl/cover. Partially open valve V_3 and V_1 to fill the housing while bleeding off the air through valve V_2. When a steady stream of water is exiting valve V_3, close valve V_1, then close V_3.
5. To purge downstream air from the system, partially open valve V_5, then slowly open valve V_1 until the inlet pressure gauge reads between 45-50 psi. Throttle valves V_1 and V_5 until the inlet gauge reads between 45-50 psi (Caution: The difference between the inlet pressure and the outlet pressure should not exceed 30 psi) and there is approximately 500 ml/min flow out of the valve V_5 per 10" equivalent.
6. Allow the system to run under these conditions for 10 minutes. This will fully wet out the filter as well as provide a brief rinse of the filter.
7. Close valve V_1, than close valve V_5.
8. The filter is now ready for integrity testing or to be placed in service.

Integrity Test by Diffusive Flow (Diagram 3)

CAUTION: DO NOT BUBBLE POINT THE FIBERFLO HF. BUBBLE POINT PRESSURES WILL DAMAGE THE MEMBRANE FIBERS. A DIFFUSIVE FLOW MEASUREMENT IS RECOMMENDED TO VERIFY FILTER INTEGRITY.

CAUTION: ALWAYS WEAR PROTECTIVE EYEWEAR NEAR PRESSURIZED VESSELS.

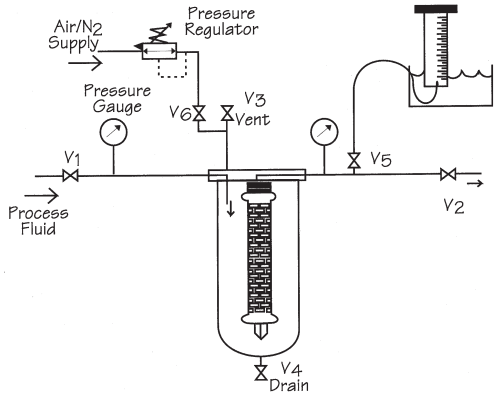

Diagram 3 – Diffusive Flow Integrity Test

1. Install and wet filters per instructions.
2. Close all valves and drain housing by opening valves V_3 and V_4. Draining the housing reduces the time required for the diffusive air flow to come to equilibrium conditions. When drained, close valves V_3 and V_4.
3. Attach flexible tubing to valve V_5. Slowly open valve V_5 and V_6, then slowly regulate the air pressure to 30 psig. Wait until a steady stream of bubbles is coming through the flexible tubing before proceeding.
4. Fill a 100 ml graduated cylinder with water and invert it in a filled collection container. Place the tubing into the submerged opening of the graduated cylinder. Measure the amount of water displaced by the air in one minute.
5. Close valve V_5 and V_6, then slowly open V_3 to vent the pressurized air.
6. Multiply the number of ten inch equivalent filters in the housing by 80 ml/min to obtain the maximum diffusive flow for the housing.

Example: A housing containing a single 30" long filter should have a diffusive flow of less than 240 ml/min (i.e. 80 x 3 = 240).

Diffusive flow in excess of 80 ml/10" equivalent. Indicates that either the filters are not fully wetted or that a mechanical leak exists in the filter/housing system. If the system fails the integrity test, wet the filters again and retest.

Filter Sanitization

The following chemicals are approved as compatible with the FiberFlo® HF and can be used for sanitizing. Any other chemical may damage the filter and/or O-rings and affect the filter performance.

Approved Sanitizer's and Contact:

Minncare®	1% for 30 minutes minimum, 96 hrs maximum
Hydrogen Peroxide	1% for 6 hours
Sodium Hypochlorite	200 ppm for 6 hours
Formaldehyde	2% for 6 hours

Sanitizing Recommendations

These guidelines are provided to support the chosen sanitizer's specific directions for use. Reference each sanitizer's material data sheet for special handling procedures.

1. Make sure the system is free from other chemicals that may react with the solution being used.
2. Mix the appropriate concentration of chemical in purified water from a reverse osmosis or deionization system. Then verify the concentration with appropriate test strips.
3. The diluted solution should be pumped through the filter housing. Alternately, the filter may be removed from the housing and soaked in the solution. If the filters are removed from the system and soaked, it is important that the entire filter be submerged and the contact time doubled. The O-rings should be removed, cleaned and then soaked separately. (Sterile gloves should be worn when handling the filter.) If the filter is disinfected more than once per month, the O-rings should be replaced every three months, only if the filter is removed from the housing.
4. After the desired contact time, the filter should be thoroughly rinsed to drain. The time required to rinse the filter will vary form system to system. Residual test strips or some other appropriate means of testing the residual concentration should be used to verify when the filter has adequately rinsed prior to placing in service.

Note: Minncare® is the recommended sanitizer because of its biocidal activity, ease of disposal, and the ability to measure residual concentrations with test strips.

Water Treatment Aaplications

The particular placement of FiberFlo® HF filter housings in water treatment systems depends on the desired performance. One suggested location would be directly downstream of the water treatment equipment as final filtration. The FiberFlo® HF will remove pyrogens, bacteria, and fine particulates that might be shed by reverse osmosis and ion exchange systems, storage tanks, filters, or by other equipment located upstream.

The FiberFlo® HF also can be installed at the point of use, where the filter will remove contaminants from the water treatment equipment and form the distribution piping.

Medical Applications

The FiberFlo® Hollow Fiber Filter is designed to remove particulate, remove bacteria and reduce pyrogen levels in your water system.

CAUTION: When used as a medical device, federal (U.S.A.) law restricts this device to sale by or on the order of a physician.

CAUTION: THIS DEVICE DOES NOT TREAT WATER; IT WILL ONLY REMOVE CONTAMINANTS BY FILTRATION. TO OBTAIN CHEMICALLY PURE WATER, IT IS NECESSARY TO USE THIS FILTER IN CONJUNCTION WITH OTHER WATER TREATMENT DEVICES SUCH AS REVERSE OSMOSIS SYSTEMS OR DEIONIZATION BEDS. THIS FILTER SHOULD NORMALLY BE PLACED FOLLOWING THESE OTHER TREATMENT DEVICES.

CAUTION: THIS FILTER SHOULD BE SANITIZED WITH THE REST OF THE WATER SYSTEM OR WHEN BACTERIAL COUNTS EXCEED THE USERS ESTABLISHED LEVELS. UNDER NORMAL USAGE, IT IS RECOMMENDED THAT THE SYSTEM BE SANITIZED AT LEAST WEEKLY UNTIL THE APPROPRIATE SANITIZATION PATTERN CAN BE ESTABLISHED.

CAUTION: THIS FILTER SHOULD BE REMOVED FROM SERVICE IF THE PRESSURE DROP ACROSS IT IS 30 PSI OR GREATER. UNDER NORMAL CONDITIONS, THE FILTER IS EXPECTED TO LAST UP TO 6 MONTHS WHEN USED IN CONJUNCTION WITH A REVERSE OSMOSIS SYSTEM AND APPROXIMATELY 3 TO 6 MONTHS WHEN USED WITH A DEIONIZING WATER SYSTEM.

This filter should be integrity tested following sanitization/rinse or steam sterilization.

Other Applications

For assistance on other applications, contact Minntech Filtration Technology's Technical Service Department.

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