

Warning

A filter housing is a pressure vessel, it must never be used above its stated maximum allowable working pressure and must be used within its stated temperature range. Ensure that these items are used in well-designed piping systems with suitable indicators to warn users and servicing personnel of the presence of pressure and high temperatures, wherever possible use pressure-limiting devices. It is the responsibility of the user to ensure that the materials of construction of the filter housing, gasket and filter media are suitable for the intended application. During every servicing, a visual inspection must be made of the surfaces of the housing for signs of corrosion, erosion or general wear. The housing must be removed from service if any of these signs are evident as there are no corrosion allowances used in the design of these filters. It is recommended that these filters be used on unstable fluids.

Warranty

Twister Instrumentation warrants their products against defects in material and workmanship for a period of one year from the date of purchase, providing use was in accordance with our recommendations. If product fails to perform as warranted, Twister will replace the product free of charges. The company will not be liable for incidental or consequential damages, labor charges, delays, or any other charges. We make no other warranty, expressed or implied.

Installing the Filter Housing

As the filter housing is a pressure vessel the system connections and accessory outlets must be leak tight. It is normally good practice to use a pipe sealant on the fittings prior to connecting to the filter housing ports. This will allow disassembly at a later time, if required. Any sealant such as PTFE tape, paste or other compound may be used if compatible with the filtered media. The torque value of the fittings will depend upon the quality of the fittings and the type of sealant used but should typically be between 40Nm and 75Nm. Ensure the fittings get inspected during servicing and retightened if necessary. It is not recommended that heads and bowls from different filter assemblies are swapped.

Particulate Gas Service

If the filter housing is being used to remove solid particulates from a gas or liquid, the flow direction through the filter element should be from **outside-to-inside** direction. Most housings have an arrow showing the correct direction. If the ports on the housing are numbered, port 1 is the inlet, and port 2 is the outlet. **When installing filter housing and elements care should be taken to ensure the head and bowls are kept as a pair.** It is not recommended that heads and bowls from different filter assemblies be swapped. Wherever possible, installation of filter housings should be made using an appropriate mounting bracket to avoid excessive loads on the piping.



Coalescing Gas Service

If the application is coalescing (removing liquids from gases) install the housing so the flow is in the opposite direction, **inside-to outside** through the filter element. In this case port 2 is the inlet, and port 1 is the outlet. Suspended liquids in the air or gas will be coalesced and the drain from the outside of the filter element into the bowl of the housing. The liquid may be removed with manual or automatic drains.

Installing the Filter Element

Ensure there is no pressure in the housing. Remove the bowl, element retainer and filter element. Disposable and sintered PTFE filter elements are sealed by compression against a flat surface. Gaskets are not required between the filter element

and components of the housing. The stainless steel elements use a gasket at each end. The element is located by guides which fit the inside diameter of the tube at each end. In most housings the element is sealed by tightening a threaded element retainer.

Installing the Filter Element Continued

The filter tube is secured sealed by tightening the element retainer a $\frac{1}{4}$ to 1 turn after it first contacts the filter element, the amount will depend on the housing type and element size. A mark on the end of the retainer is used a guide. Before replacing the housing bowl ensure that the mating threads and sealing surfaces are clean and damage free. It is recommended that the threads and sealing faces are lubricated with a small amount of silicone grease before assembly. Stainless steel housings fitting with a solid PTFE gasket the bowl should be tightened to a torque of between 30Nm and 40Nm. Grade 70C is a pneumatic grade coalescing filter. For instrument filtration, use a Grade 70C (prefilter), followed by a Grade 50C final filter with inside to outside flow on both housings.

When to Change the Filter Element

Twister coalescing filters are designed to have an initial dry pressure drop of less than 2 PSI. Thereafter, the pressure drop will increase very slowly as solid particles are captured and retained in the capture layer of the element. Particles are captured throughout the depth of the element and therefore cannot be back flushed or cleaned in a solution. Twister recommends changing the filter element when the pressure drop reaches 10 PSI. An optional differential pressure indicator will give a visual warning of the need to change the filter element. Make sure to shut off the line pressure before changing elements. **Note** that before resuming line pressure be sure that all port connections, the drain plug, and housing bowl are securely installed. All connections must be **LEAKTIGHT** to insure effective filtration as well as **SAFTEY**. The user, through his own analysis and testing, is solely responsible for the product selection and ensuring all responsibility, safety and warning requirements of the application are met. *** Please consult your factory authorized Twister representative for other filtration applications. *** Note that other grades of Twister filter elements may be used with our housings.

DPI (Differential Pressure Indicator)

We offer two types of DPI kits: The dome type with a yellow stem is set to rise from a 2 to 16 PSIG differential. The Visual Differential Indicator is designated as "VDI" and is designed as a colored gauge with set points from 0 to 6.2 PSIG in the green range, 6.3 to 9.6 in the yellow range, and an end point of 14 PSIG in the red range.

Fast Loop

It's recommended that the Fast Loop filter be mounted in a vertical position with the removable end cap on top for ease of service. This will prevent liquids from spilling out while the filter element is being changed. Since the Fast Loop Filter is considered a pressure vessel all connections must be leak tight. When servicing the Fast Loop Filter ensure that there is no pressure in the line. Remove the cap by turning it counter clockwise until the cap can be removed. Replace the filter cartridge and then thread the cap back on clockwise until the threads bottom out. Note: There is no torque value associated with this housing.

Onstream

Onstream Series Liquid Housings should be mounted in a vertical position. For leak tight service be sure to use a quality Pipe Sealant or PTFE Tape. When changing the filter element 1st turn off the supply of liquid and bleed the pressure from the line. Remove the top bolt by tuning counter clockwise until the bowl can lowered and then remove the cartridge. Once a new cartridge is installed into the bowl, carefully slide center rod through the head and tighten top nut counter clockwise to 30 Foot Pounds of Torque.



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