

# Classic FILTERS INSTRUCTIONS

## Warning

A membrane 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 or safety devices. The pressure rating of the housing is reduced at higher temperatures and Classic Filters should be consulted for more information.

It is the responsibility of the user to ensure that the materials of construction of the membrane housing, gasket and membrane media are suitable for the intended application. During 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 no corrosion allowances are used in the design of these housings. It is not recommended that these housings be used on unstable fluids.

When installing the membrane housing the user must take into account the following items -

- Static pressure and mass of contents
- Traffic, wind and earthquake loading
- Reaction forces and moments resulting from mounting
- Corrosion, erosion and fatigue
- Decomposition of unstable fluids.
- External fire.

## Explanation of the Housing Labels

The housing will have one or two labels. If the housing falls within the Sound Engineering Practice (SEP) category of the Pressure Equipment Directive 97/23/EC then only Label 1 will be used. All other housings will have both Label 1 and Label 2.



## Installing the Membrane Housing

As the membrane 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 re-tightened if necessary.

Normally the housing will have four ports numbered 1 to 4. Port 1 is the inlet, and port 2 the outlet. Suspended liquids in the air or gas will be prevented from passing to the outlet port by the membrane and then drain from the outside of the membrane to the drain port. Either port 3 and 4 can be used for the drain port, depending on how the housing is situated in the system. The optional drain port allows the housings to be piped with a direction from "left to right" or "right to left" as required. The unused port can be closed with the plug supplied. Ports 3 and 4 can also be used for a bypass function.

**Note** - The housing should be mounted vertically with the drain port at the lowest port.

When installing membrane housing and replacing the membranes 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 housing assemblies be swapped. Wherever possible, installation of membrane housings should be made using an appropriate mounting bracket to avoid excessive loads on the piping.

## Installing the Membrane

Ensure there is no pressure in the housing. Remove the cap and membrane holder to gain access to the membrane. The membrane is held in position by a gasket, remove this gasket and the membrane and discard both. When installing a new membrane ensure that sintered stainless steel support disc is in its correct position and lay the membrane over it, making sure it is centrally located. Press the new gasket over the membrane and into the groove making sure the surface of the membrane is smooth and without wrinkles. Replace the membrane holder into the housing. It is recommended that the threads and sealing faces are lubricated with a small amount of silicone grease before assembly.

Before replacing the cap ensure that the mating threads and sealing faces are clean and damage free. Again, it is recommended that the threads and sealing faces are lubricated with a small amount of silicone grease before assembly.

## Service Intervals

A membranes will continue to function at its original efficiency as long as it is kept in service. The life of the membrane is determined by the increase in flow resistance caused by trapped solids on the surface. The membrane should be changed when the flow falls below an acceptable level, or the pressure drop becomes too high. In any case the element should be replaced before the pressure drop across it reaches 0.4 Bar. The membranes cannot be cleaned.

Ensure that gaskets are changed at suitable intervals. The interval time will depend on service and operating conditions, but it should be at least every three months.

## Other Information

Please contact Classic Filters Ltd. if you need any other information.