INSTALLATION & OPERATING INSTRUCTIONS
77-SERIES – BOLTED CLOSURE

These housings are suitable, at the operating parameters stated, for all liquids and gases classified as Group 1 and Group 2. These fluid and gas groups are as defined in the European Pressure Equipment Directive 97/23/EC.

1  Design Data
See appendix A.

2  Connections

Body: the part of the housing that is fixed to the legs or to the carrying structure
Top cover: the part of the housing that is taken off to exchange the filter cartridges. This part has 2 handles to facilitate safe removal
Inlet: the larger connection in the body, which, when facing the nameplate is to your:
right-hand side: type 77TRK052 and 77Air082
left-hand side: type 77TRK052-HF
Outlet: the other larger connection in the body,
Vent: connection located in the top cover of the housing
Drain: the smaller connection in the body (type 77Air082 only)

3  Installation

3.1  Vent
Fit the blanking cap (not supplied) or the vent and gauge kit as appropriate, to the vent in the top cover. Seal with the aid of PTFE tape or an appropriate sealant as required.

3.2  Drain
Fit the blanking cap (not supplied) or drain valve as appropriate, to the drain connection. Seal with the aid of PTFE tape or an appropriate sealant as required.

3.3  Inlet/Outlet
Connect the inlet and outlet pipe work to the housing connections. For threaded connections use PTFE tape or an appropriate sealant as a seal. For flanged connections use a suitable gasket, and for dairy connections use the correct sealing ring.

It is important that the pipe work to and from the filter is adequately supported: THE FILTER HOUSING MUST NOT BE USED AS A SUPPORT POINT.

BEFORE OPERATING WE RECOMMEND THAT THE FILTER IS FLUSHED THOROUGHLY...
4 Safety

***IMPORTANT SAFETY NOTES - PLEASE READ BEFORE USING THIS HOUSING***

1. Never attempt to open the housing whilst under pressure.
2. Never operate the housing outside of its permitted operating parameters as stated (i.e. over pressure, under vacuum, over or under temperature).
3. For safety, we recommend that a pressure relief device be installed in the system to prevent over- pressurisation.
4. Never use the housing for fluids/gases other than those for which it is rated, and ensure that the housing & seal materials are compatible with the process fluid/-gas.
5. Take care to protect operators from hot surfaces if the housing is operated at high temperatures.
6. Failure of the filter housing could result from misuse - please ensure that these installation, operating & maintenance procedures are strictly adhered to.

We have not considered the following factors in the design of this housing, as they are either negligible or not considered appropriate for this product, unless specifically stated:

1. Static pressure/head
2. Traffic, wind and earthquake loading
3. Decomposition effects of unstable fluids
4. Creep, fatigue and corrosion allowances
5. External fire

5 Operation

IMPORTANT: BEFORE OPENING THE HOUSING, ALWAYS ENSURE THAT THE SYSTEM IS NOT UNDER PRESSURE

5.1 Opening the filter

If the filter housing has been in service, first follow the instructions given in section 5.6 "Removing the filter from service". Release the bolts by unscrewing the nuts evenly. Remove the bolts and nuts, and remove the top cover. Remove the gasket from the groove in the body flange. Store them in a safe place where they cannot get dirty or damaged.

5.2 Preparing the filter for the cartridges

5.2.1 Housings that accept 222-style cartridges
If you use 222-style cartridges, remove the compression plate. Next fit the cartridges in place as described in section 5.3.1 “Fitting Single Open End (‘O’-ring size 222) cartridges”.

5.2.2 Housings that accept 226-style cartridges
If you use 226-style cartridges, remove the compression plate. Next fit the cartridges in place as described in section 5.3.2 “Fitting Single Open End (‘O’-ring size 226) cartridges”.

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5.3 Fitting the filter cartridges

Inspect the seals at both ends of each cartridge (if fitted). Ensure there is no damage. Do not fit damaged cartridges.
The cartridges are loaded into the housing through the top opening.

5.3.1 Fitting Single Open End (‘O’-ring size 222) cartridges
Lubricate the ‘O’-rings in the bottom end of the cartridges with clean water or product solution. Place one cartridge into each hole of the diaphragm plate. Push each cartridge down in position with a slight rotation ensuring that the fit feels firm and that the cartridge remains in an upright position. Place the compression plate over the tie rods and guide the spear at the top of each cartridge into one of the holes. Screw the compression nuts down on the tie rods by hand only, to allow approximately 5-8 mm free movement of the compression plate.

Note:
Many polymeric cartridges will expand at elevated temperatures.
Restricting the movement of the cartridges can cause damage!

5.3.2 Fitting Single Open End (‘O’-ring size 226) cartridges
Lubricate the ‘O’-rings in the bottom end of the cartridge with clean water or product solution. Place one cartridge into each hole of the diaphragm plate noting the position of the locking lugs. Push each cartridge down in position and rotate in a clockwise direction until the cartridge is locked in position under the lugs. Ensure that the fit feels firm and that the cartridge remains in an upright position. Place the compression plate over the tie rods and guide the spear at the top of each cartridge into one of the holes. Screw the compression nuts down on the tie rods by hand only, to allow approximately 5-8 mm free movement of the compression plate.

Note:
Many polymeric cartridges will expand at elevated temperatures.
Restricting the movement of the cartridges can cause damage!

5.4 Closing the filter housing

Check the body flange, gasket, and top cover for any dirt or damage. Clean away any foreign objects and replace defective parts as necessary.
Place the gasket back into the groove on the body flange. Replace the top cover.
A small amount of suitable lubricant can be used on the sliding faces of the bolts. Close the bolts, and tighten them evenly, to ensure that there is even pressure by the bolts around the periphery of the housing and top cover.

5.5 Putting the filter into service

Ensure that the inlet and outlet valves are shut. Ensure that the drain valves (if fitted) are closed or that the drain plugs are fitted.
Open the vent valve or plug.
Gradually open the inlet valve on the upstream side of the filter housing whilst ensuring that the downstream valve remains closed.
As the housing fills, air will be expelled from the vent. When all the air has been expelled, fluid will begin to flow from the vent. For safety reasons, it is important to ensure that the vent and the drain connections are secure and that released fluid is disposed of into an appropriate drain or container. You must take appropriate measures, if the liquid is hazardous. Close the vent valve or plug, then slowly open the outlet valve.
The filter is now in service and no attempt should be made to open the cover.

Regularly vent the housing, by opening the vent to permit any trapped air to vent to atmosphere. This will maintain the operating efficiency of the filter. For safety reasons, it is important to ensure that venting is performed via a valve, that the valve is opened with extreme care and that released fluid is disposed of into an appropriate drain or container. You must take appropriate measures, if the liquid is hazardous. The filter can be operated until the increase in the pressure differential across the filter cartridge reaches approximately 1.5 bar (g) (25psi). At this point, the filter cartridges should be replaced.
5.6 Removing the filter from service

Close the outlet valve.
Close the inlet valve.
**Caution! The filter housing will still be under pressure at this point.**

Before opening the filter housing, the pressure must be relieved. You can do this by carefully opening the vent valve, or plug. The vent must be open to allow the housing to drain properly. If the fluid is hazardous, you must take appropriate measures, before opening the closure.
For safety reasons, it is important to ensure that the vent and the drain connections (such as any valves or hoses) are secure and that released fluid is disposed of into an appropriate drain or container.

5.7 Replacing the filter cartridges

Open the filter housing according to the instructions given in the section 5.1 "Opening the filter housing". Release the compression nuts and remove the compression plate. Store in a safe place to ensure that they will not get dirty or damaged. If there is any problem in removing the compression nuts, please see the detailed instructions in section 6 "Maintenance".

5.7.1 Removal of Single Open End (‘O’-ring size 222) cartridges
Remove each cartridge from the diaphragm plate. Twisting and lifting each cartridge will assist in releasing the seal.

5.7.2 Removal of Single Open End (‘O’-ring size 226) cartridges
Remove each cartridge from the diaphragm plate by rotating 450 in an anti-clockwise direction, and then lifting each cartridge.

Install the new cartridges according to the instructions described under section 5.2 "Fitting the filter cartridges".

5.8 Spent Cartridge disposal

The spent filter cartridges should be disposed of in a responsible manner. You can dispose of the filter itself by incineration or as landfill, by an authorised contractor. However, it is important for the user to check how the contaminant contained in the filter should be disposed of.

6 Maintenance

The filter housing will require very little maintenance.

Keep the outer surface clean and free from dirt. This will prevent contamination of the filter during cartridge change.

Maintain the bolts as follows:
Use a small amount of a suitable lubricant on the sliding surfaces of the bolts. Periodically grease the screw thread. We recommend the use of a molybdenum-based grease, which will adhere to the thread. Binding of the threads can occur if you do not lubricate them regularly.

Inspect the top cover seal each time you open the filter housing and replace as required.
You must check the housing for any visible signs of corrosion or wear damage, internally and externally, on a routine basis.
Carry out the internal examination via the housing closure.

Warranty:
Techno Filter warrants the products described herein, which are manufactured by Techno Filter, to be free from defects in material and workmanship for a period of one (1) year from the date of shipment from Techno Filter, under normal use and service. Techno Filter's sole obligation under this warranty is limited to repairing or replacing, as hereinafter provided, at its option, any product found to Techno Filter's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Techno Filter within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labour.

This warranty does not apply to:
(a) Parts or products not manufactured by Techno Filter, the warranty of such items being limited to the actual warranty extended to Techno Filter by their supplier;
(b) Any product that has been subjected to abuse, negligence, accident or misapplication;
(c) Any product altered or repaired by others than Techno Filter; and
(d) Normal maintenance services and replacement of service items (such as washers, gaskets and lubrication) made in with such service.

To the extent permitted by Dutch law, this limited warranty shall extend only to the Buyer, and any other person reasonably expected to use or consume the goods, who is affected in person by any breach of the warranty. No action may be brought against Techno Filter for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be constructed and enforced to the fullest extent allowable by Dutch law.

Other than the obligation of Techno Filter expressly set forth herein, Techno Filter disclaims all warranties express or implied, including but not limited to any warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Techno Filter's sole obligation with respect to damages, whether direct, incidental or consequential, resulting from the use or performance of the product.