142 and 293 mm Stainless Steel Disc Filter Holders

- Designed for large-volume liquid clarification and sterilization applications.
- Provides up to 15% greater filtration area than most competitive units for higher flow rates and extended service life.
- Recommended for the filtration of laboratory solvents, cell culture media, ophthalmics, pharmaceuticals, vitamins, make-up water, antibiotics, and photoresists.
- Broad chemical resistance with corrosion-resistant type 316 stainless steel construction.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Qty/Bag</th>
</tr>
</thead>
<tbody>
<tr>
<td>11872</td>
<td>Disc filter holder, 142 mm</td>
<td>1</td>
</tr>
<tr>
<td>11871</td>
<td>Disc filter holder, 293 mm</td>
<td>1</td>
</tr>
</tbody>
</table>

Specifications

- **Materials of Construction**
  - Electropolished type 316 stainless steel except:
    - Legs: 316 stainless steel with copper threads
    - Knob Assembly: Aluminum with copper threads
    - O-rings: Viton®

- **Active Filtration Area**
  - 142 mm: 126 cm²
  - 293 mm: 387 cm²

- **Dimensions**
  - Clearance between flange and benchtop: 29 cm (11.4 in.)

- **Prefilter Size**
  - 142 mm: 127 mm if used with a final filter, 142 mm if used alone
  - 293 mm: 265 mm if used with a final filter, 293 mm if used alone

- **Inlet/Outlet Connections**
  - Sanitary 3.8 cm (1.5 in.) fittings

- **Maximum Operating Pressure**
  - 6.0 bar (890 kPa, 100 psi)

- **Maximum Operating Temperature**
  - Limited by membrane filter type or Viton® O-ring: 204 °C (399 °F)

- **Weight**
  - 142 mm: 7 kg (15 lb.)
  - 293 mm: 17 kg (38 lb.)

- **Sterilization**
  - Provided non-sterile, autoclavable if desired 142 mm: 121-123 °C (250-253 °F), 45 min at approximately 1.0 bar (100 kPa, 15 psi) 293 mm: 121-123 °C (250-253 °F), 60 min at approximately 1.0 bar (100 kPa, 15 psi) (Do not autoclave with aluminum foil; use autoclave paper or other permeable wrap.)

Assembly/Disassembly

1. The legs of the disc filter holders slip into the bottom of the outlet flange and are held securely by Allen screws (accessible at the side of the flange). The top extensions of the legs serve as guides to align the inlet flange. The inlet flange is removed by unscrewing the hand knobs. Once the knobs are loosened, the inlet flange may be lifted off, exposing the internal parts of the filter holder.
2. The purge valve may be removed by unscrewing it. Tape should be applied to the threads to ensure adequate sealing when the valve is replaced.
3. The underdrain screen should be placed in the outlet flange with the flat surface facing down against the flange. The support screen, a thin photoetched disc, should be placed down on top of the underdrain screen. Be careful to position it in the appropriate groove of the outlet flange to prevent damage when the inlet flange is replaced.
4. Before replacing the inlet flange, check to make certain the O-ring is in good condition and properly seated in the inlet flange. Replace the inlet flange, taking care to align the three holes at the edge of the flange with the leg extensions. The hand knobs should be tightened gradually in opposing pairs.

Instructions for Use

The disc filter holders may be used for either simple clarification or sterilization of liquids. The slightly differing procedures for each are provided for your convenience.

Clarification

1. Place the membrane filter in the holder. Be careful to position it on the support screen properly.
2. Check the O-ring to make certain it is in good condition and snugly seated in the O-ring groove.
3. Replace the inlet flange in position, locating it on the three centering pins.
4. Gradually tighten the hand knobs or screws in opposing pairs. Avoid uneven tightening, which could cause misalignment of the flanges and prevent proper sealing.
5. Attach inlet and outlet hose connections, and open the purge valve.
6. Start liquid through the filter holder. When a steady stream is obtained, close the purge valve and continue filtration. Do not exceed 7 bar (700 kPa, 100 psi) on the inlet.

Sterilization

1. The holder must be absolutely clean and dry before assembling. Any water in the holder will damage the membrane filter during autoclaving.
2. Follow steps 1, 2, and 3 listed above for clarification.
3. Hose, suitable for autoclaving, may be attached to the holder during the sterilization process. Cover the open ends of the hose or inlet connections on the holder with autoclave paper to avoid moisture from condensing and reaching the membrane filter. Cotton plugs should not be used in the outlet because of particulate contamination.
4. Start the sterilization process. Cover the open ends of the hose or inlet connections on the holder with autoclave paper to avoid moisture from condensing and reaching the membrane filter. Cotton plugs should not be used in the outlet because of particulate contamination.
5. The system pressure should be monitored carefully. Pressure gauges may be installed in the system upstream and downstream of the filter holder.
6. The holder must be absolutely clean and dry before assembling. Any water in the holder will damage the membrane filter during autoclaving.

Guidelines

1. If there is a possibility of the system pressure exceeding 7 bar (700 kPa, 100 psi) because of extreme clogging, a suitable relief valve must be installed on the inlet side of the filter holder. A slight flex of the filter plates may be observed when operating at maximum pressure, but does not affect integrity of the filter holder.
2. Do not exceed the recommended temperature limitations for the O-ring or membrane filter.
3. To determine when the filter has collected contaminants to the point where flow becomes significantly reduced, pressure gauges may be installed in the system upstream and downstream of the filter holder. Or, a differential pressure gauge may be installed in parallel. It is recommended that the filter be replaced when differential pressure across the membrane rises to double that of a clean membrane filter at initiation. If desired, a differential pressure gauge may be installed to activate an alarm signal or automatic valves to divert flow through a standby filter holder.
4. To protect against contaminants from the outlet side of the filter holder being added to the process stream, liquid effluent from the first few minutes of operation should be discarded or recirculated back to the inlet side to flush the system clean.
5. The unit may be used with fluids known to be compatible with the materials of construction as listed in the specification area and with the particular membrane filter selected. Because chemical resistance is often dependent upon pressure and/or temperature and the presence of trace impurities, no warranty is extended on this filter holder with respect to material compatibility with any fluid. A PTFE coated O-ring is available for use in those situations where Viton and ethylene propylene are not compatible.
6. If the unit is to be installed into a rigid piping system, care should be taken to avoid misalignments that would put stress on the holder and possibly impair sealing. Flexible connectors (bellowes, etc.) are strongly recommended.
3. If the filter holder is to be stored or left out of service for a long period of time, the holder should be allowed to cool to room temperature. Use of a drying cycle on the autoclave will prevent excess moisture from condensing inside the filter holder.

4. If the filter holder is stored after autoclaving, the holder should be allowed to cool to room temperature before removal from the autoclave. Do not use a drying cycle in the autoclave to dry the filter holder after autoclaving.

5a. PN 11872: Autoclave at 121-123 °C (250-253 °F) at approximately 1.0 bar (100 kPa, 15 psi) for a maximum of 60 minutes. After the heating cycle, the autoclave should be rapidly exhausted. The holder should be allowed to cool to room temperature. Use of a drying cycle on the autoclave will prevent excess moisture from condensing inside the filter holder.

5b. PN 11873: Autoclave at 121-123 °C (250-253 °F) at approximately 1.0 bar (100 kPa, 15 psi) for a maximum of 60 minutes. After the heating cycle, the autoclave should be rapidly exhausted. The holder should be allowed to cool to room temperature. Use of a drying cycle on the autoclave will prevent excess moisture from condensing inside the filter holder.

6. When the filter holder has cooled, finish tightening the hand knobs or screws. Be careful to tighten uniformly in opposing pairs to prevent misalignment of the flanges.

Cleaning, Maintenance, and Storage

1. The filter holders may be cleaned using fluids compatible with the materials of construction. Do not use hydrochloric acid with any stainless steel apparatus. For some applications, the outlet flange, underdrain screen and support screen will remain sufficiently clean after normal use. They should be carefully cleaned before initial use to remove all contaminating material below the filter, and carefully inspected for imbedded or sticky contaminants. In ultrasonic cleaning, the entire unit should be thoroughly cleaned before use. Ultrasonic cleaning is recommended for all parts. If brushes or tools are used, care must be taken not to damage either the screens or the O-ring, and to avoid scoring the sealing surface of the lower flange. Wire brushing may leave deposits of corrosive metal on the surface of the stainless steel, resulting in rust formation.

2. If the edge of the support screen becomes bent, it may be straightened by placing the damaged edge on a flat and relatively soft surface (i.e. wood), and running a wooden dowel or pencil over the bent surface.

3. If the filter holder is to be stored or left out of service for a long period of time, the filter should be removed and the holder thoroughly cleaned. Inlet and outlet connections should be covered to prevent contamination.

Replacement Parts

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<tr>
<th>Part Number</th>
<th>Description</th>
<th>Pkg</th>
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<tr>
<td>72141</td>
<td>Type 316 stainless steel deflector</td>
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<tr>
<td>72215</td>
<td>Anodized aluminum hand knob</td>
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<td>72989</td>
<td>Viton O-ring, ARP No. -454 for 142 mm filter holder</td>
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<td>70975</td>
<td>Viton O-ring, ARP No. -451 for 293 mm filter holder</td>
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<td>72416</td>
<td>142 mm support screen type 316 stainless steel</td>
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<td>72151</td>
<td>293 mm support screen type 316 stainless steel</td>
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<tr>
<td>72994</td>
<td>142 mm underdrain disc type 316 stainless steel</td>
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<td>72191</td>
<td>293 mm underdrain disc type 316 stainless steel</td>
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<tr>
<td>76341</td>
<td>Screw, bottom</td>
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<td>76386</td>
<td>Purge valve, 1/8 in. threaded FNPT type 316 stainless steel</td>
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<td>76396</td>
<td>Hose assembly kit includes clamp and PTFE gasket, type 316 stainless steel inlet/outlet adapter, 3.8 cm (1.5 in.) sanitary to 8.5 mm (3/8 in.) hose barb</td>
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<td>Inlet/Outlet adapter type 316 stainless steel, 3.8 cm (1.5 in.) sanitary to 3/4 in. -14 FNPT</td>
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<td>72202</td>
<td>Inlet/Outlet clamp, 38 mm, type 304 stainless steel</td>
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<td>Inlet/Outlet gasket, PTFE</td>
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<td>Inlet/Outlet gasket, Viton</td>
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<td>72945</td>
<td>O-ring, Buna-N, PTFE coated, ARP No. -354, for 142 mm Filter Holder</td>
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<td>O-ring ethylene polypropylene, ARP No. -354, for 293 mm Filter Holder</td>
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<td>72994</td>
<td>142 mm underdrain disc type 316 stainless steel, 1 pkg</td>
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<tr>
<td>72994</td>
<td>142 mm underdrain disc type 316 stainless steel, 1 pkg</td>
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