Steam is an often neglected part of a process, regarded as an add on to a customers liquid or gas filtration needs. It has however, large specific applications in its own right and should be treated with the same level of importance as air, gas and liquid systems if long filter lifetimes and system cost effectiveness are to be achieved.

The quality of steam used within the food and dairy industries has been raised higher on the agenda in an ever increasing number of companies. Minimum acceptable standards are now being quoted on a more regular basis with particular reference to ‘culinary grade’ steam. Steam serves several purposes in the food & beverage industry. It is critical that this steam is of a high quality to ensure effective and continuous operation of the process.

**Features and Benefits**

- 316L stainless steel filter cartridges
- Exceptionally high flow rates
- Available in culinary grade 1 micron
- High dirt holding capacity
- ‘JUMBO’ filter configuration ensures maximum utilization of pipework capacity
### Which Filter for Which Application?

<table>
<thead>
<tr>
<th>Application Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Process Steam**      | • Direct from boiler  
                         • No direct contact with product being manufactured                      |

**Applications**

- General heating
- Steam jackets
- Bio waste kill systems

**Cartridges**

- Required if steam is used to sterilize liquid and gas cartridge filters

**Selection Criteria**

- Sintered 25 µm
- Pleated 5 µm

**Culinary Steam (3A Standard 609-03)**

- 95% retention of >2 micron particles in the liquid phase
- Manufactured from 300 series stainless steel
- Any additives to the boiler feed should conform to CFR Title 21, Chapter 1, Part 173, Section 173.310

**Applications**

- Used in direct contact with food
- Direct contact with food processing equipment and HVAC systems

**Cartridges**

- Selection dependent on flow parameters

**Selection Criteria**

- Sintered 1 µm
- Pleated 1 µm

<table>
<thead>
<tr>
<th><strong>Clean Steam (HTM 2031:1997)</strong>*</th>
<th>Condensate to WFI standards</th>
</tr>
</thead>
</table>

**Applications**

- Pharmaceutical products
- Pharmaceutical plant HVAC systems

**Cartridges**

- For removal of magnetite particles generated from stainless steel pipes due to corrosive purity of steam

**Selection Criteria**

- JUMBO Filters
- HIGH FLOW TETPOR II
- Culinary 1µm

**HIGH FLOW TETPOR II**

- PTFE membrane 100% removal of magnetite particles generated from stainless steel pipes

**Culinary 1µm**

- To conform to HTM 2031 Point of Use filter rated at <5 µm

**Sintered 1 µm**

- Use for relatively low flow rates

**Pleated 1 µm**

- Used to maximize steam capacity of pipe

**JUMBO Filters**

- Highest available capacity

**Pleated 5 µm**

- High flow rate and dirt holding capacity
Specifications - PLEATED

Materials of Construction

- Filtration Media: 316L Stainless Steel
- Inner Support Core: 316L Stainless Steel
- Outer Support Cage: 316L Stainless Steel
- End Caps: 316L Stainless Steel
- Standard o-rings/gaskets: EPDM (standard)
  Silicone and Viton (options available)

Recommended Operating Conditions

- The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).
- The maximum differential pressure in direction of flow (in to outside) is 2 barg (29.00 psig).
- The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).
  Note: Temperature dependant on o-ring compound

Effective Filtration Area (EFA)

10" (250 mm) 0.15 m² (1.61 ft²)

Housing Materials of Construction

- Material: 316L Stainless Steel
- Surface Finish:
  Single Internal: Electropolished Ra 0.8
  Single External: Mechanical Polish (Commercial Bright)
  Jumbo Internal: Upstream - Beadblast
  Outlet Assembly - Linished 180 grit
  Jumbo External: Beadblast
- Vent / Drain:
  Single / Jumbo: 1/4¨ BSPP Female Thread
- Seal Material:
  EPDM Aseptic Seal

Housing Design Pressure and Temperature

- Single: 16 barg (232 psig) @ 200 °C (392 °F)
- Jumbo: 7 barg (101 psig) @ 170 °C (338 °F)

Correction Factors

To use the table above, the steam flow rates must be at 1 barg (14.50 psig). For system flows at different line pressures, divide the system flow by the correction factor below to find the equivalent flow @ 1 barg (14.50 psig).

<table>
<thead>
<tr>
<th>Steam Pressure Correction Factor</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.5</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
<td>4.0</td>
<td>4.5</td>
<td>5.0</td>
<td>5.5</td>
</tr>
</tbody>
</table>

Table showing the relative system size difference between pleated cartridges left and sintered cartridges right.
Specifications - SINTERED

Materials of Construction
- Filtration Media: Sintered Stainless Steel (316L)
- End Caps: Stainless Steel (316L)
- Standard o-rings/gaskets: EPDM (standard), Silicone and Viton (options available)

Recommended Operating Conditions
- The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).
- The maximum differential pressure in direction of flow (in to outside) is 5 barg (72.51 psig).
- The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).
  Note: Temperature dependent on o-ring compound

Housing Materials of Construction
- Material: 316L Stainless Steel
- Surface Finish: Electropolished Ra 0.8
- Internal: Mechanical Polish [Commercial Bright]
- External: Female Thread [Supplied with Plug]
- Vent / Drain: 1/4¨ BSP female
- Seal Material: EPDM Aseptic Seal

Housing Design Pressure and Temperature
- 16 barg (232 psig) @ 200 °C (392 °F)

Correction Factors
To use the table above, the steam flow rates must be at 1 barg (14.50 psig). For system flows at different line pressures, divide the system flow by the correction factor below to find the equivalent flow @ 1 barg (14.50 psig).

Ordering Information

SINTERED Stainless Steel Retrofit Cartridge Part Numbers - 1.0 µm & 25 µm

<table>
<thead>
<tr>
<th>Parker domnick hunter</th>
<th>Retrofit Cartridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS-R 1/2</td>
<td>DS-R 1/4</td>
</tr>
<tr>
<td>P-GS02/05</td>
<td>GS03/02</td>
</tr>
<tr>
<td>P-SS02/05</td>
<td>SS03/02</td>
</tr>
</tbody>
</table>