ISO “L” Style Vacuum Filters

WL Series NW16 - NW40 FLG

Features

- ISO flange connections
  - Stainless steel ISO flange
  - Buna o-ring sealed
- Seamless drawn housings
- Corrosive resistant carbon steel construction
- Powder coat finish (black models)
- O-ring housing seal
- Stainless steel torsion clips

Technical Specifications

- Vacuum Leak Rate: 1x10^{-5} mbar/l/sec
- Vacuum Rating: medium vacuum service*
- Temp (continuous): min -15°F (-26°C) max 220°F (104°C)
- Filter change out differential: 28 – 37 Torr over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

- Contact factory for larger sizes & ISO flanges
- Viton seals
- Stainless steel (select models)
- Activated alumina, activated zeolite media available for foreline trap and other applications

Applications

- Prevent dry scroll tip seal migration
- Vacuum coating
- Trap condensable vapors
- Protect against backstreaming
- Polycrystalline silicone ingot production
- Solar cell lamination
- Thin-film manufacturing

Black Housing Finish

Electroless Nickel Housing Finish

* Medium vacuum service is defined as having a gas leak rate up to 6x10^{-5} mbar/l/sec.
### WL Series NW16 - NW40 FLG

**SS ISO Flange w/Black Filter Assembly Finish**

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<td>55</td>
<td>WL-843-NW40B</td>
<td>WL-842-NW40B</td>
<td>A 4½ B 3½ C 5¼ D 3¼</td>
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**SS ISO Flange w/Electroless Nickel Filter Assembly Finish**

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Rated flows are determined based upon atmospheric conditions, for exact sizing or larger flows, please contact factory.

*See Vacuum Filter Technical Data for vacuum service data and sizing guidelines.*

[www.solbergmfg.com](http://www.solbergmfg.com)

All model offerings and design parameters are subject to change without prior notice. Contact your representative or Solberg for the most current information.
Medium to High Vacuum Filtration

WL Vacuum Series K100 - K320

Overview
Solberg’s WL Series Vacuum Filters are designed for a variety of industrial and semicon processes where rapid thermal and/or pressure cycles create harsh operating conditions. Ideal for medium-high vacuum applications that utilize vacuum furnaces or deposition tools, the WL series comes standard with a variety of vacuum rated flange options and replaceable filter elements that offer superior protection and longevity for the vacuum system. Housings in this series are 100% helium leak tested to ensure vacuum integrity and verify leak rates down to 1x 10⁻⁵ mbar/l/s.

Features
- ISO-K stainless steel flanges standard
- Machined flange surface to RMS63, uncoated
- High quality vacuum service components
- Corrosive resistant black powder coat carbon steel
- KF10 differential ports for accurate vacuum Δ P readings
- Machined & polished sealing surfaces on ISO flange faces for reliable vacuum performance on all flange types
- K200 housings and larger have domed lid to minimize deflection and increase durability

Technical Specifications
- Rated vacuum leak rate of 1x10⁻⁵ mbar/l/sec or better (verified by helium leak test)
- Temp (continuous): min -15°F (-26°C) max 220°F (104°C)
- Filter change out differential: 28 – 37 Torr over initial ΔP
- Polyester: 99%+ efficiency to 5 micron
- Paper: 99%+ efficiency to 2 micron
WL Vacuum Series K100 - K320

Options
- Filter media options available to meet strict process requirements: PTFE, PTFE Glass, SS mesh, and more
- If required, tanks can be tested to a lower leak rate. Please contact factory.

Flange Types Available:

<table>
<thead>
<tr>
<th>ISO-K Inlet &amp; Outlet</th>
<th>Assembly SCFM Rating</th>
<th>Assembly Part Number</th>
<th>Assembly Part Number</th>
<th>Dimensions - inches</th>
<th>Suggested Service Ht. inches</th>
<th>Replacement Element Part No.</th>
<th>Element SCFM Rating</th>
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<tbody>
<tr>
<td>K100</td>
<td>520</td>
<td>WL-235P-K100</td>
<td>28 ⅞</td>
<td>9</td>
<td>12 ¼</td>
<td>18 ½</td>
<td>235P</td>
</tr>
<tr>
<td>K100</td>
<td>520</td>
<td>WL-335P-K100</td>
<td>28 ⅞</td>
<td>9</td>
<td>12 ¼</td>
<td>18 ½</td>
<td>335P</td>
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<tr>
<td>K160</td>
<td>1100</td>
<td>WL-275P-K160</td>
<td>30 ⅞</td>
<td>12</td>
<td>16 ¼</td>
<td>20 ½</td>
<td>275P</td>
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<td>K160</td>
<td>1100</td>
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<td>12</td>
<td>16 ¼</td>
<td>20 ½</td>
<td>375P</td>
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<tr>
<td>K200</td>
<td>1800</td>
<td>WL-377P-K200</td>
<td>44</td>
<td>14</td>
<td>20 ¾</td>
<td>25 ½</td>
<td>377P</td>
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<tr>
<td>K250</td>
<td>2900</td>
<td>WL-385P-K250</td>
<td>53 ⅞</td>
<td>16 ½</td>
<td>24 ¾</td>
<td>34</td>
<td>385P</td>
</tr>
<tr>
<td>K320</td>
<td>4670</td>
<td>WL-485P-K320</td>
<td>53 ⅞</td>
<td>16 ½</td>
<td>24 ¾</td>
<td>34</td>
<td>485P</td>
</tr>
<tr>
<td>K320</td>
<td>4953</td>
<td>WL-685P-K320</td>
<td>64 ¼</td>
<td>16 ¾</td>
<td>24 ¾</td>
<td>45</td>
<td>685P</td>
</tr>
</tbody>
</table>

Rated flows are determined based upon atmospheric conditions, for exact sizing please contact factory.
Special configurations available upon request.

All model offerings and design parameters are subject to change without prior notice.
Contact your representative or Solberg for the most current information.
Applications & Equipment
- Industrial & Severe Duty
- Vacuum Pumps & Systems: Roots, Rotary Vane, Screw, Piston
- Vacuum Packaging Equipment
- Vacuum Furnace
- Blowers: Side Channel & P.D.
- Vacuum Lifters
- Intake Suction Filters
- Food Industry
- Woodworking/Routers
- Ash Handling
- Printing Industry
- Medical/Hospital
- Remote Installations for Piston & Screw Compressors
- Paper Processing
- Waste Water Aeration
- Cement Processing
- Bag House Systems
- Vacuum Vent Breathers
- Chemical Processing
- Factory Automation Equipment
- Leak Detection Systems

Identification
Standard Solberg assemblies should have an identification label/nameplate that gives the following information:
- Assembly Model #
- Replacement Element #
The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being a “CSL” design filter with a “235” element, “P” prefilter and 4” flange connection size.

CSL-235P-400F
Connection Size and Type
Replacement Element Part Number
Filter Type

Vacuum Service Rating Chart
Threaded vacuum filter connections must be free of defect and properly sealed to achieve deeper vacuum levels. Vacuum service levels are given for reference only and serve as a guideline for product selection. Product certification and alternative designs are available for applications requiring deeper vacuum levels and specific leak rates. Please contact factory for details.

<table>
<thead>
<tr>
<th>Vacuum Level</th>
<th>Pressure (mbar)</th>
<th>Pressure (Torr)</th>
<th>Pressure (Pa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmospheric Pressure</td>
<td>1013</td>
<td>760</td>
<td>1.013x10^5</td>
</tr>
<tr>
<td>Coarse Vacuum</td>
<td>1013 to 33</td>
<td>760 to 25</td>
<td>1x10^-3 to 3x10^-3</td>
</tr>
<tr>
<td>Medium Vacuum</td>
<td>33 to 1.3x10^-3</td>
<td>25 to 1x10^-1</td>
<td>3x10^-9 to 1x10^-7</td>
</tr>
<tr>
<td>High Vacuum</td>
<td>1.3x10^-3 to 1.3x10^-9</td>
<td>1x10^-3 to 1x10^-9</td>
<td>1x10^-7</td>
</tr>
</tbody>
</table>

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Choosing the Best Filter for Your Equipment

A. When the connection & airflow is known:
   1. select the appropriate connection style. (i.e.: MPT, Flange, NPSC, etc.)
   2. check assembly SCFM (flow) rating. Compare with your required airflow.
      (Note: Assembly flow ratings are based on 6,000 FPM or 30m/sec for a given connection size to achieve low pressure drop performance. When required flow exceeds assembly flow rating, the pressure drop through the outlet connection will increase. In such cases select by element SCFM (flow) rating.)
   3. when required flow rating matches connection size; skip to “C. Selecting Elements”.

B. When the connection size is unknown, flexible, or the required flow rating exceeds assembly flow rating:
   1. match required flow rating with the element flow rating.
   2. choose related connection size.

C. Selecting Elements: The filter performance is influenced by the actual application duty and the equipment it is installed on. Regular maintenance checks and proper servicing is required.
   
   **Application Duty Descriptions:**
   Industrial Duty: clean workshop or clean outdoor environment - small element sizing is sufficient.
   Severe Duty: dirty workshop, wastewater – medium to large element is recommended.
   Extreme Duty: cement, steel making, plastics or dusty material conveying – largest element sizing is recommended.
   1. Select media required by your application. Options include:
      a. Standard media
         1. Polyester: all purpose; withstands pulses, moisture, and oily air
         2. Paper: mostly dry, smooth flow applications
      b. Special Media: for a variety of micron levels and media types, see the “Filter Media Specifications” in the Replacement Element Section or contact Solberg.
   2. Select element size by matching the element with the anticipated duty and upsize accordingly.

Filter Assembly Maintenance

Request the appropriate maintenance manual for more in-depth information from your Solberg representative or on our website www.solbergmfg.com.

Element Maintenance

Solberg elements should be replaced once the pressure drop reaches 15-20” H₂O above the initial pressure drop of the installation. Cleaning the element is also an option.

Solberg recommends replacing dirty elements for optimal performance. Any damage which results from by-pass or additional pressure drop created by element cleaning is the sole responsibility of the operator.

Note: The overall performance of a filter element is altered once cleaned. The initial pressure drop after subsequent cleanings will be greater than the original, clean pressure drop of the element. After each cleaning, the pressure drop will continue to increase. Under all circumstances, the initial pressure drop of the element needs to be maintained at less than 15” H₂O.

If the pressure drop exceeds 20” H₂O at start-up; it should be replaced with a new element. With many types of equipment, the maximum pressure drop allowed will be dictated by the ability of the equipment to perform to its rated capacity. Under all circumstances, the operator should avoid exceeding the manufacturer’s recommended maximum pressure drop for their specific equipment.