SOLBERG®
Filtration & Separation

Medium to High Vacuum Filtration

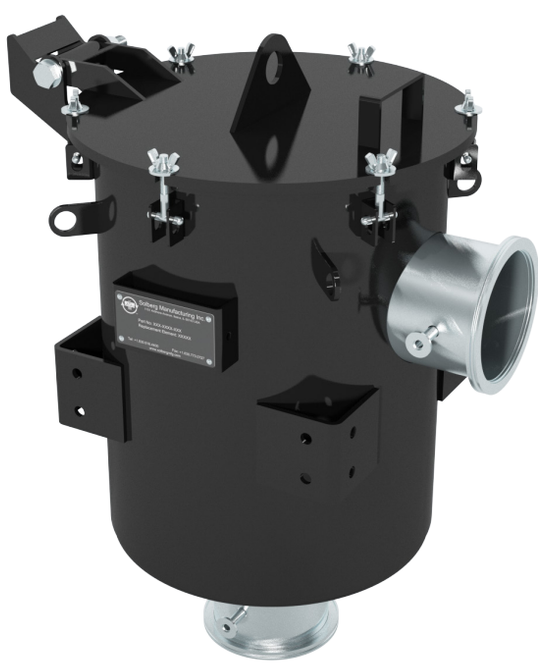
WL Vacuum Series K100 - K320

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.



K200 and larger configuration

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 ΔP 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 -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ efficiency to 5 micron

Rev: WL-EU0719K

United Kingdom
Phone: +44 (0) 1902 798499
UKsales@solbergmfg.com

Belgium
Phone: +32 3 774 52 11
BEsales@solbergmfg.com

Germany
Phone: +49 9129 145 3902
vertrieb@solbergmfg.com

Slovakia
Phone: +421 (0) 48 41 33 251
predaj@solbergmfg.com

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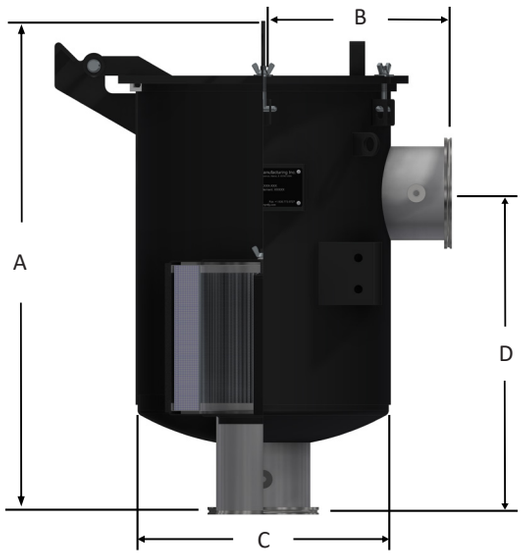


ISO-K Inlet & Outlet	Assembly m³/hr Rating	Assembly Part Number	Dimensions (mm) A	B	C	D	Suggested Service Ht. mm	Replacement Element Part No.	Element m³/hr Rating
K100	885	**WL-235P-K100**	716	229	311	470	244	235P	970
K100	885	**WL-335P-K100**	716	229	311	470	368	335P	1360
K160	1870	**WL-275P-K160**	767	305	413	521	244	275P	1870
K160	1870	**WL-375P-K160**	767	305	413	521	368	375P	2550
K200	3060	**WL-377P-K200**	1116	356	518	648	368	377P	3105
K250	4930	**WL-385P-K250**	1364	410	619	864	368	385P	5610
K320	7935	**WL-485P-K320**	1364	410	619	864	546	485P	8000
K320	8415	**WL-685P-K320**	1648	410	619	1143	724	685P	11220

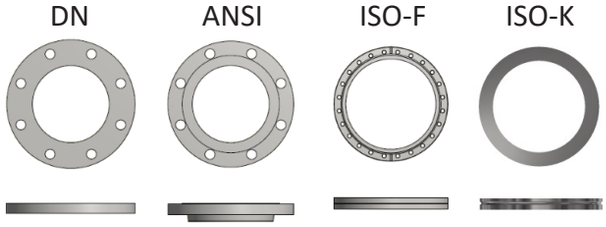
Rated flows are determined based upon atmospheric conditions, for exact sizing please contact factory. Special configurations available upon request.

Options

ATEX Available

- Filter media options available to meet strict process requirements: PTFE, PTFE Glass, SS mesh, and more
- Paper: 99%+ efficiency to 2 micron
- If required, tanks can be tested to a lower leak rate. Please contact factory.

Flange Types Available:



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

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Technical Data

Inlet Vacuum Filters

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 DN100 flange connection size.

CSL-235P-DN100

- 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.

Vacuum Level	Pressure (mbar)	Pressure (Torr)	Pressure (Pa)
Atmospheric Pressure	1013	760	$1.013x10^{+5}$
Coarse Vacuum	1013 to 33	760 to 25	$1x10^{+5}$ to $3x10^{+3}$
Medium Vacuum	33 to $1.3x10^{-3}$	25 to $1x10^{-3}$	$3x10^{+3}$ to $1x10^{-1}$
High Vacuum	$1.3x10^{-3}$ to $1.3x10^{-9}$	$1x10^{-3}$ to $1x10^{-9}$	$1x10^{-1}$ to $1x10^{-7}$

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Inlet Vacuum Filters

Choosing the Best Filter for Your Equipment

A. When the connection & airflow is known:

1. select the appropriate connection style. (i.e.: BSPT, Flange, BSPP, etc.)
2. check assembly m^3/hr (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 m^3/hr (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 37-50 mbar 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 37 mbar.

If the pressure drop exceeds 50 mbar 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.

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