

# Vacuum Traps

## VTL / VTS Series NW16 - NW50

### Overview

Solberg's vacuum traps can be used to protect a variety of vacuum pump technologies from particulate, liquid, aerosol and vapour contaminants migrating from a process. Multiple insert options and configurations are available to ensure pumps are properly protected. The trap minimizes pump oil contamination resulting in significantly fewer oil changeouts and reduced maintenance costs.

### Benefits

- Prevent back streaming
- Remove hydrocarbons
- Trap condensable vapours
- Reduce overall maintenance costs
- Chemical resistant
- Easy maintenance

### Features

- All stainless steel construction
- No tools needed to separate housing hemispheres with the quick release v-band for ease of maintenance
- Integrated drain port
- Connections available NW16, 25, 40, 50

### Technical Specifications

- Vacuum service down to  $1 \times 10^{-3}$  mbar
- Leak rate:  $1 \times 10^{-7}$  mbar L/sec
- Temperature range -20°C to 150°C
- Fine bead blast finish
- Viton O-ring



**VTL Series**



**VTS Series**

## Standard Configurations:

### Stainless Steel Metal Wool

- Trap hydrocarbons and large particulate
- Replaceable stainless steel or copper insert
- Reduce contamination

### Molecular Sieve

- Trap water vapour and other gases
- Rechargeable 13X Zeolite desiccant
- Integral 120 VAC or 240 VAC regeneration heater
- Reduce oil change-out

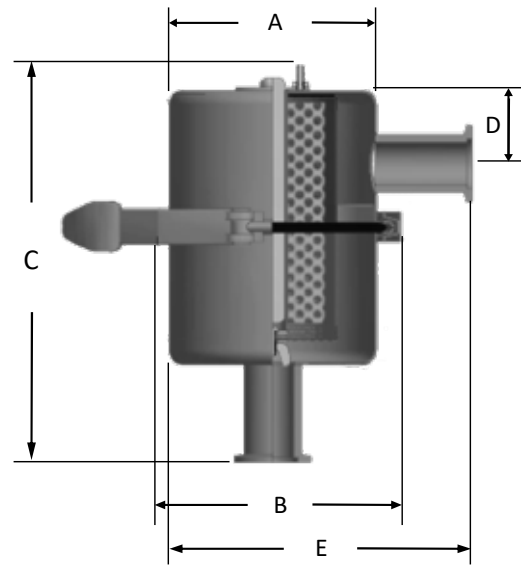
## Options (contact factory):

### Chemical Adsorbents

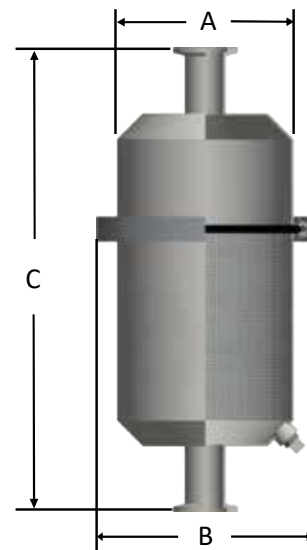
- Trap chemicals and corrosives
- Chemical compatible adsorbents available (ie: activated carbon, alumina, SodaSorb, etc.)
- Reduce hazards

### Fine Particulate

- Trap fine particulate
- Multiple media available (down to .2 micron at 99.99% efficiency)
- Reduce dust and particle ingestion



**VTL Configuration**



**VTS Configuration**

Assembly Part Number	VTL Housing Size	Dimensions - mm				
		A	B	C	D	E
VTL-SSM4-NW16S1	4"	102	133	191	38	168
VTL-SSM4-NW25S1	4"	102	133	191	38	168
VTL-SSM6-NW40S1	6"	155	183	248	64	211
VTL-MS4-NW25S1	4"	102	133	191	38	168
VTL-MS4-NW40S1	4"	102	133	191	38	168
VTL-MS6-NW50S1	6"	155	183	248	64	211

Assembly Part Number	VTS Housing Size	Dimensions - mm		
		A	B	C
VTS-SSM4-NW16S1	4"	102	135	286
VTS-SSM4-NW25S1	4"	102	135	286
VTS-SSM6-NW40S1	6"	155	183	286

**NOTE :** When unable to achieve base pressure, the operator should regenerate the sieve by turning on the heater for a few hours and running the mechanical pump with its ballast valve open. The frequency and duration of sieve regeneration depends on the kind and amount of gas(es) produced by the particular application.



# 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
- Sterilization
- 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
- Semiconductor / Solar

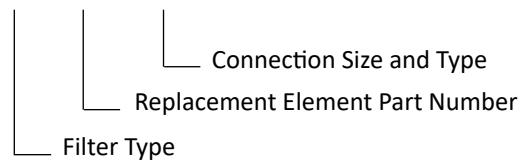
### Identification

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



### 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 <sup>5</sup>
Rough Vacuum	1013 to 33	760 to 25	1x10 <sup>5</sup> to 3x10 <sup>+3</sup>
Medium Vacuum	33 to 1.3x10 <sup>-3</sup>	25 to 1x10 <sup>-3</sup>	3x10 <sup>+3</sup> to 1x10 <sup>-1</sup>
High Vacuum	1.3x10 <sup>-3</sup> to 1.3x10 <sup>-9</sup>	1x10 <sup>-3</sup> to 1x10 <sup>-9</sup>	1x10 <sup>-1</sup> to 1x10 <sup>-7</sup>

## 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.)
  - a. Verify assembly m<sup>3</sup>/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<sup>3</sup>/hr (flow) rating.)
  - b. Verify that the 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](http://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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