

# See-Through Liquid Separators

## STS Series 1" - 4"

### Overview

Inlet air with potentially harmful liquid and large particulate enters the housing and is separated by a baffle mechanism and directional air flow changes. The larger particles and liquid drop down and collect at the bottom of the separator. The float capsule within the separator screen rises with the liquid level until max capacity and limits the flow, thereby protecting the pump from damage.

### Benefits

- Minimize the likelihood of damage to vacuum valves and pumps from liquid
- Protect installed equipment from liquid contamination by retrofitting STS separator
- Easy visual inspection with see-through housing
- Reduce piping costs with T-style configuration
- Compact design for space restricted work areas

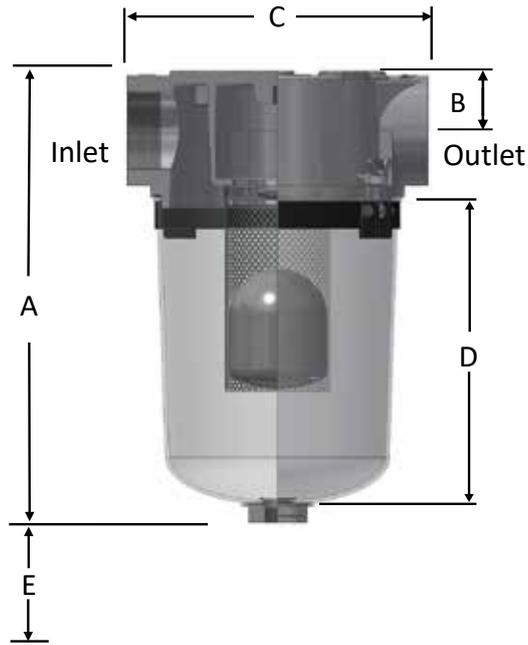
### Features

- Compact design for space restrictions; min. service area
- Inlet above element for extended element life & maintenance intervals
- Corrosive resistant cast aluminum top with machined connections and integrated baffle design
- Shatter-resistant polycarbonate drop down bucket
- Stainless steel float capsule for emergency shut-off
- Stainless steel perforated float tube (SS expanded metal on 1" to 1 ½")
- Clamp style swing bolts on 3" & 4" standard
- Drain

### Technical Specifications

- Vacuum Rating: medium vacuum service\*
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)\*\*





Inlet/Outlet		Assembly m <sup>3</sup> /hr Rating	Assembly Part Number	Dimensions - mm				Suggested Service ht. E	Holding Capacity (liter)
Size	Type			A	B	C	D		
1"	BSPP	42	STS-101C	362	325	178	285	228	1.6
1 ¼"	BSPP	68	STS-126C	362	325	178	285	228	1.6
1 ½"	BSPP	102	STS-151C	362	325	178	285	228	1.6
2"	BSPP	178	STS-201C	438	388	229	342	228	3.7
2 ½"	BSPP	195	STS-251C	438	388	229	342	228	3.7
3"	BSPP	407	STS-301C	522	454	343	378	228	5.7
4"	BSPP	424	STS-401C	522	454	343	378	228	5.7

## Options

- Cast head protective coatings
- Heavy duty carbon steel buckets available (CTS Series)
- Clamp style swing bolts on 1" to 2 ½"
- Extended capacity (select models)
- Pressure drop gauge
- Taps for gauges and mounting brackets

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

\*\*Temperature for materials only.



# 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

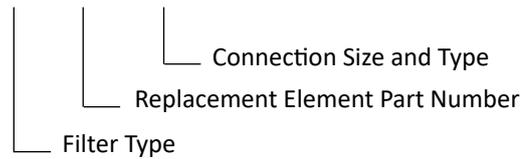
### Identification

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.

